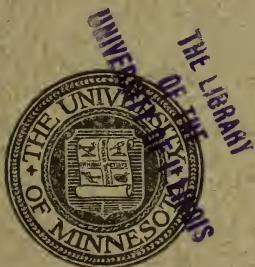


1918/19

*The Bulletin  
of the University of  
Minnesota*

*The College of Education  
Announcement for the Year  
1918-1919*



**IMPORTANT**

The hours and credits assigned to the courses in this bulletin are subject to revision, owing to the adoption by the University, after this bulletin had gone to press, of a four-semester year. A definite announcement will be prepared in the immediate future.

**Vol. XXI No. 32 October 9 1918**

*Entered at the post-office in Minneapolis as second-class matter  
Minneapolis, Minnesota*

*Acceptance for mailing at special rate of postage provided for in section 1103,  
Act of October 3, 1917, authorized July 12, 1918*



# **THE COLLEGE OF EDUCATION**

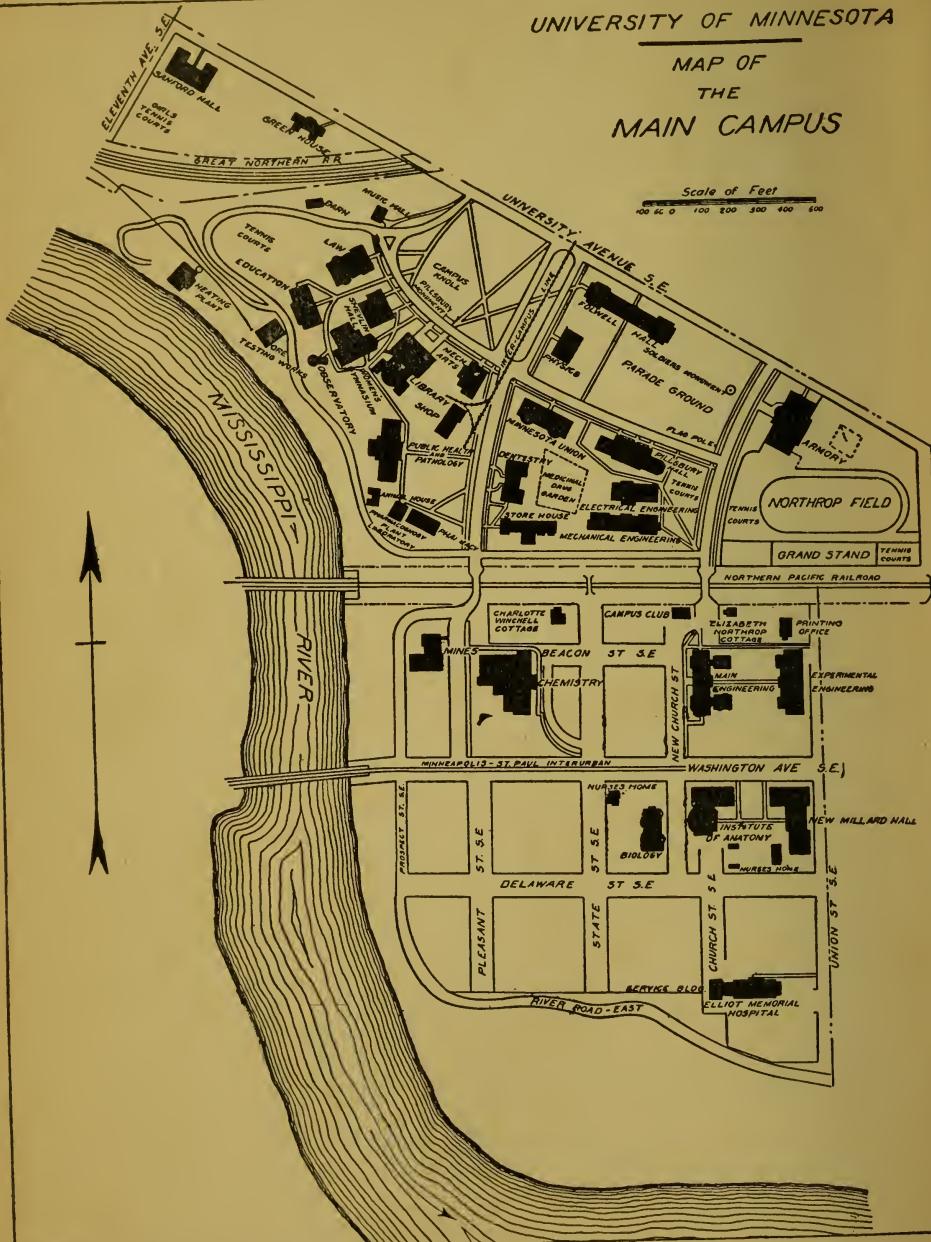
**ANNOUNCEMENT FOR  
THE YEAR**

**1918-1919**

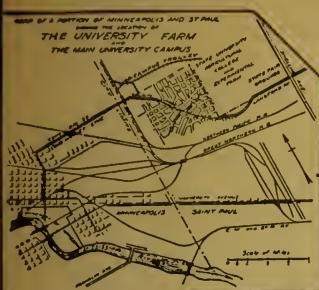
UNIVERSITY OF MINNESOTA

MAP OF  
THE  
MAIN CAMPUS

Scale of Feet  
100 50 0 100 200 300 400 500



Area of Main Campus, 108.5 acres



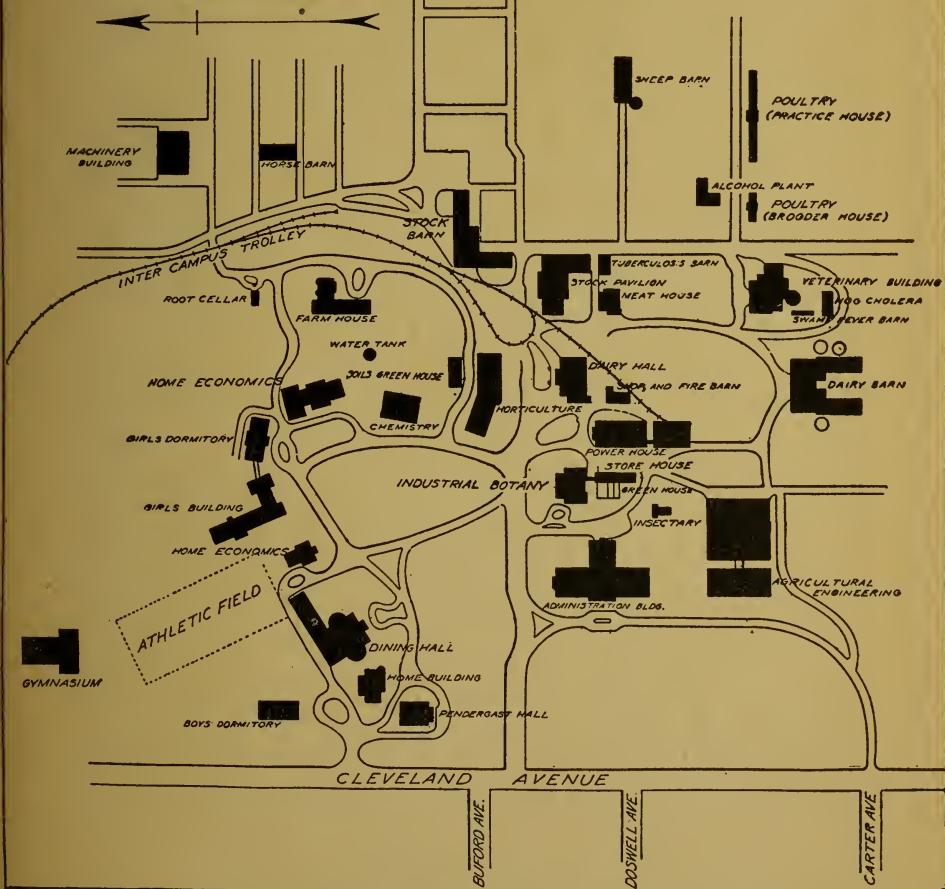
## UNIVERSITY OF MINNESOTA

### MAP OF THE CAMPUS OF THE

### UNIVERSITY FARM

Scale of Feet

100 50 0 100 200 300 400 500



O. S. Zelner.

Area of University Farm, 422.56 acres

1918							1919							1919							
JULY							JANUARY							JULY							
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	
..	1	2	3	4	5	6	..	..	..	1	2	3	4	..	..	..	1	2	3	4	5
7	8	9	10	11	12	13	5	6	7	8	9	10	11	6	7	8	9	10	11	12	
14	15	16	17	18	19	20	12	13	14	15	16	17	18	13	14	15	16	17	18	19	
21	22	23	24	25	26	27	19	20	21	22	23	24	25	20	21	22	23	24	25	26	
28	29	30	31	..	..	..	26	27	28	29	30	31	..	27	28	29	30	31	..	..	
AUGUST							FEBRUARY							AUGUST							
..	4	5	6	7	8	9	10	..	2	3	4	5	6	7	1	3	4	5	6	7	2
11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16	
18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23	
25	26	27	28	29	30	31	23	24	25	26	27	28	..	24	25	26	27	28	29	30	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER							
1	2	3	4	5	6	7	..	2	3	4	5	6	7	1	..	1	2	3	4	5	
8	9	10	11	12	13	14	9	10	11	12	13	14	15	7	8	9	10	11	12	13	
15	16	17	18	19	20	21	16	17	18	19	20	21	22	14	15	16	17	18	19	20	
22	23	24	25	26	27	28	23	24	25	26	27	28	29	21	22	23	24	25	26	27	
29	30	..	..	..	..	..	30	31	..	..	..	..	..	28	29	30	..	..	..	..	
OCTOBER							APRIL							OCTOBER							
..	6	7	8	9	10	11	12	6	7	8	9	10	11	12	..	5	6	7	8	9	
13	14	15	16	17	18	19	19	13	14	15	16	17	18	19	14	15	16	17	18	19	
20	21	22	23	24	25	26	26	20	21	22	23	24	25	26	19	20	21	22	23	24	
27	28	29	30	31	..	..	30	27	28	29	30	..	..	..	26	27	28	29	30	31	
NOVEMBER							MAY							NOVEMBER							
..	3	4	5	6	7	8	9	4	5	6	7	8	9	10	..	2	3	4	5	6	
10	11	12	13	14	15	16	16	11	12	13	14	15	16	17	9	10	11	12	13	14	
17	18	19	20	21	22	23	23	18	19	20	21	22	23	24	16	17	18	19	20	21	
24	25	26	27	28	29	30	30	25	26	27	28	29	30	31	23	24	25	26	27	28	
DECEMBER							JUNE							DECEMBER							
1	2	3	4	5	6	7	1	2	3	4	5	6	7	..	..	1	2	3	4	5	
8	9	10	11	12	13	14	8	9	10	11	12	13	14	7	8	9	10	11	12	13	
15	16	17	18	19	20	21	15	16	17	18	19	20	21	14	15	16	17	18	19	20	
22	23	24	25	26	27	28	22	23	24	25	26	27	28	21	22	23	24	25	26	27	
29	30	31	..	..	..	..	29	30	..	..	..	..	..	28	29	30	31	..	..	..	

UNIVERSITY CALENDAR  
1918-1919

1918

September	11	Wednesday	Registration closes except for new students
September	11-18	Week	Fees payable except for new students
September	17-24	Week	Examinations for removal of conditions and entrance examinations
September	23-24		Registration and payment of fees for new students
September	25	Wednesday	First semester begins
September	30	Monday	First semester evening extension classes begin
October	17	Thursday	Senate meeting, 4:00 p.m.
November	5	Tuesday	General Election Day; a holiday
November	27	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	2	Monday	Thanksgiving recess ends 8:00 a.m.
December	21	Saturday	Christmas vacation begins 12:00 m.
1919			
January	2	Thursday	Christmas vacation ends 8:00 a.m.
January	20	Monday	Second semester registration closes except for new students
January	24	Friday	First semester evening extension classes close
January	27	Monday	Final examinations begin
January	27	Monday	Payment of second semester fees closes except for new students
January	31	1	Registration and payment of fees for new students
February	1	1	Second semester begins
February	3	Monday	Second semester evening extension classes begin
February	3	Monday	Lincoln's Birthday; a holiday
February	12	Wednesday	Senate meeting, 4:00 p.m.
February	20	Thursday	Washington's Birthday; a holiday
February	22	Saturday	Easter recess begins 9:00 p.m.
April	17	Thursday	Easter recess ends 8:00 a.m.
April	22	Tuesday	Condition examinations in certain colleges
April	22-28	Week	Senate meeting, 4:00 p.m.
May	15	Thursday	Final examinations begin 2:00 p.m.
May	23	Friday	Second semester evening extension classes close
May	23	Friday	Memorial Day; a holiday
May	30	Friday	Second semester closes
June	1	Sunday	Baccalaureate service
June	2	Monday	Senior Class Day exercises
June	4	Wednesday	Alumni Day
June	5	Thursday	Forty-seventh Annual Commencement
June	6	Friday	Summer vacation begins
June	16	Monday	Summer Session begins

The University year for 1919-20 will begin Tuesday, September 16. Classes will begin September 24.

## THE COLLEGE OF EDUCATION

### FACULTY

MARION LEROY BURTON, Ph.D., D.D., LL.D., President	1005 S. E. 5th St.
CYRUS NORTHROP, LL.D., President Emeritus	510 10th Ave. S. E.
LOTUS D. COFFMAN, Ph.D., Dean and Professor of Education	1115 E. River Road
FLETCHER H. SWIFT, Ph.D., Executive Secretary of the College of Education	819 S. E. Superior St.
EDWARD E. NICHOLSON, M.A., Dean of Student Affairs	508 5th Ave. S. E.
GEORGE N. BAUER, Ph.D., Professor of Mathematics	1201 E. River Road
WILLIAM O. BEAL, M.A., M.S., Assistant Astronomer	1082 16th Ave. S. E.
JOSEPHINE T. BERRY, M.A., Professor of Nutrition	2176 Scudder Ave. St. Paul
GISLE BOTHNE, M.A., Professor of Scandinavian Languages	619 9th Ave. S. E.
CARLETON BROWN, Ph.D., Professor of English	416 8th Ave. S. E.
SYLVIA CAMPIGLIA, B.S. in Ed., Assistant Professor of Textiles and Clothing	2328 Priscilla St. St. Paul
LOUIS J. COOKE, M.D., Director of Physical Education for Men	909 6th St. S. E.
HERMIONE L. DEALY, Ph.D., Assistant Professor of Educational Psychology	826 University Ave. S. E.
OLIVER C. EDWARDS, M.E., Assistant Professor of Trade Mathematics	424 Harvard St. S. E.
HENRY A. ERIKSON, Ph.D., Professor of Physics	2089 Carter Ave. St. Paul
ALBERT M. FIELD, M.S., Assistant Professor of Agricultural Education	ELIZABETH M. FISH, Special Lecturer in Trade and Industrial Education
	3301 1st Ave. So.
BUEFORD M. GILE, B.S., Assistant Professor of Agricultural Education	2309 Priscilla St. St. Paul
*MELVIN E. HAGGERTY, Ph.D., Professor of Educational Psychology	
WILLARD E. HOTCHKISS, Ph.D., Professor of Economics	214 Walnut St. S. E.
CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy	436 Harvard St. S. E.
WILLIAM H. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry	722 10th Ave. S. E.
FREDERICK KLAEBER, Ph.D., Professor of Comparative Philology	619 9th Ave. S. E.
PAUL KLOPSTEG, Ph.D., Assistant Professor of Physics	

\*Absent on leave.

AUGUST C. KREY, Ph.D., Associate Professor of History	939 14th Ave. S. E.
WINFORD P. LARSON, M.D., Associate Professor of Bacteriology	614 9th Ave. S. E.
DEXTER D. MAYNE, Professor of Agricultural Pedagogics	1403 Cleveland Ave., St. Paul
*WILFORD S. MILLER, Ph.D., Assistant Professor of Education and Principal of the University High School	
J. ANNA NORRIS, M.D., Director of Health and Physical Education for Women	509 6th St. S. E.
EVERETT W. OLMS TED, Ph.D., Professor of Romance Languages	2727 Lake of Isles Blvd.
JOSEPH B. PIKE, M.A., Professor of Latin	1025 6th St. S. E.
CHESSLEY J. POSEY, M.S., Assistant Professor of Geography	1627 Melbourne Ave. S. E.
ALBERT W. RANKIN, B.A., Professor of Education	916 5th St. S. E.
RUTH RAYMOND, Assistant Professor of Art Education	
CHARLES A. SAVAGE, Ph.D., Professor of Greek	618 10th Ave. S. E.
CARL SCHLENKER, B.A., Professor of German	514 11th Ave. S. E.
CARLYLE SCOTT, Professor of Music	3322 Lyndale Ave. S.
RAYMOND W. SIES, Ph.D., Professor of Education	
CHARLES P. SIGERFOOS, Ph.D., Professor of Zoology	1023 University Ave. S. E.
ANDREW A. STOMBERG, M.S., Professor of Scandinavian Languages	531 Walnut St. S. E.
ASHLEY V. STORM, M.A., Professor of Agricultural Education	
FLETCHER H. SWIFT, Ph.D., Professor of Education	2239 Como Ave. W., St. Paul
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ARTHUR J. TODD, Ph.D., Professor of Sociology	818 University Ave. S. E.
MARVIN J. VAN WAGENEN, Ph.D., Assistant Professor of Educational Psychology	713 8th Ave. S. E.
MILDRED WEIGLEY, B.S., Associate Professor of Home Economics	629 6th St. S. E.
MARION WELLER, B.A., Assistant Professor of Textiles and Clothing	2176 Scudder Ave., St. Paul
NORMAN WILDE, Ph.D., Professor of Philosophy	2176 Scudder Ave., St. Paul
	901 6th St. S. E.

## SPECIAL LECTURERS IN TRADE AND VOCATIONAL EDUCATION

ELIZABETH M. FISH  
 LEILA GERRY  
 GEORGE A. MCGARVEY  
 E. M. PHILLIPS  
 INA C. WISNER

\*Absent on leave.

## INSTRUCTORS

JEAN H. ALEXANDER, M.A., Instructor in Education  
 JOHN V. ANKENY, B.S., Instructor in Agricultural Education 2189 Buford Ave. St. Paul  
 PERCY B. BARKER, M.S., Instructor in Agricultural Education 512 Delaware St. S. E.  
 JOSEPHINE DE BOER, B.A., Instructor in Teachers' Course in Romance Languages 800 4th St. S. E.  
 WILLIAM P. DYER, B.A., Instructor in Agricultural Education 2170 Doswell Ave. St. Paul  
 ISAAC W. GEIGER, Ph.D., Instructor in Teachers' Course in Chemistry  
 THADDEUS P. GIDDINGS, Instructor in Public School Music  
 REWEY BELLE INGLIS, B.A., Instructor in Methods of Teaching High School English 2436 Bryant Ave. S.  
 ARTHUR W. JOHNSON, M.A., Instructor in Teachers' Course in Botany  
 ALBERT J. LOBB, B.A., LL.B., Instructor in Teachers' Course in Political Science  
 GEORGINA LOMMEN, Instructor in Methods of High School Teacher Training Departments  
 WILLIAM D. REEVE, B.S., Acting Principal University High School and Instructor in Methods of Teaching High School Mathematics 820 University Ave. S. E.

## UNIVERSITY HIGH SCHOOL

JOSEPHINE DE BOER, B.A., French  
 MARIE B. DENEEN, B.A., Latin  
 ETHEL DUSTIN, Art  
 SYBIL FLEMING, M.A., History  
 SOPHIA HUBMAN, M.A., German  
 REWEY BELLE INGLIS, B.A., English  
 JAMES F. MACKELL, B.A., Science  
 FRANCES M. MOREHOUSE, M.A., History  
 SAMUEL R. POWERS, B.A., Science  
 WILLIAM D. REEVE, B.S., Mathematics  
 DORA V. SMITH, B.A., English  
 W. RAY SMITH, B.A., Mathematics  
 LYNNE E. STOCKWELL, Manual Training

## ASSISTANTS

RAYMOND N. CARR, Assistant in Public School Music  
 MRS. AGNES FRYBERGER, Assistant in Public School Music  
 JUDITH JACOBS, B.A., Assistant in Educational Psychology  
 HELEN MARR, Assistant in Art Education  
 HAZEL SMALL, Assistant in Art Education  
 FLORENCE D. WILLETS, Assistant in Art Education

## GENERAL INFORMATION

The College of Education was authorized by special enactment of the Legislature of Minnesota in 1905 and was established by the Regents of the University in the following year. It has the following purposes:

1. To offer opportunity for the study of education as an important enterprise of society and as of peculiar interest to all persons whether they are preparing for teaching or not.
2. To offer inexperienced university students who intend to become teachers the technical training for their vocation.
3. To offer experienced teachers or those actively engaged in service opportunity for advanced professional study under direction.
4. To offer to university students, and to all teachers of suitable attainment, appropriate training designed to prepare them for successful careers as public school administrators, normal school teachers, or college teachers of education.
5. To offer opportunity for original investigation, research, and experiments in education and for the preparation of constructive contributions to educational theory and practice.

In fulfilling these purposes the College of Education offers the professional courses for the training of superintendents, principals, supervisors of special subjects, rural school supervisors, teachers of the high-school subjects, manual training teachers, school librarians, teachers of high-school teacher-training departments, teachers of agriculture, teachers of home economics, teachers of physical education, supervisors of playground and recreation activities.

### *University High School*

The University High School and the College of Education are located in the Education Building. The University High School is maintained, first, to conserve the interests of its student body, and, second, to provide superior opportunities for observation and directed teaching for prospective teachers. To fulfill the latter obligation, teachers of recognized skill and proficiency have been engaged as critic teachers. In co-operation with the high-school principal, these critics supervise all the practice of the student teachers. For further information consult the Bulletin of the University High School.

## ADMISSION

Students looking forward to teaching should consult with the Dean of the College of Education or the Chairman of the Program Committee early in their course.

Not infrequently seniors discover that a slight difference in arrangement of studies in their courses made during their freshman or sophomore years would have made them much more eligible for teaching positions.

Students are held responsible for arranging their courses so as to meet all requirements. To do this intelligently they should secure from the Registrar's office or the office of the Dean of the College of Education the following bulletins and pamphlets:

Bulletin of General Information

Bulletin of the College of Education

Bulletin of any other college in which subject matter courses are to be pursued

Bulletin of the University High School

Information for New Students

See also page 14 of this bulletin.

#### *Regular Students*

To be admitted to regular standing in the College of Education, students must be able to satisfy either of the following requirements, (a) or (b).

(a) Completion of at least the freshman and sophomore years of the College of Science, Literature, and the Arts, or of some other approved college at the University of Minnesota or elsewhere, during which time an introductory course in general psychology shall have been pursued. No formal application is necessary for transfer from the College of Science, Literature, and the Arts to the College of Education, nor is any loss of credits involved. Students able to meet the requirements set forth above simply make known their desire at the Registrar's office at the time of registration and they will thereupon be furnished with College of Education registration cards.

(b) Graduation from an approved normal school of Minnesota or of some other state. See below under Advanced Standing.

(c) In special subjects like Art Education where a three- or four-year curriculum is provided, students may register in the College of Education in their freshman or sophomore years.

#### *Unclassed Students*

Normal school graduates receiving forty-two credits, teachers preparing for examination for the first grade professional certificate, but who are unable to meet the regular requirements for admission, teachers in service unable to carry full work, and certain other classes of students are admitted to the College of Education as unclassed students. Each case must, however, be dealt with individually as the result of formal application to the Dean.

Unclassed students in the College of Education will find it possible to pursue all subjects required for a first grade professional certificate.

*Student Advisers*

Only members of the Faculty of the College of Education may act as student advisers.

## ADVANCED STANDING

*By Examination*

The tendency of the College of Education is distinctly toward discouraging any effort to secure advanced standing in professional subjects by examination. With the establishment of correspondence courses in the General Extension Division, there are no longer the reasons which formerly existed for granting such examination. (See also statement, Practice Teaching, page 22.)

*Graduates of Minnesota Normal Schools*

The College of Education grants to graduates of the advanced graduate course of Minnesota state normal schools sixty credits of advanced standing (approximately two years' credit); to graduates of the advanced Latin or advanced English course, forty-two credits.

Graduates of the three-year course in the state normal schools of Minnesota may receive not more than seventy-five credits in the College of Education at the University of Minnesota; credits earned in the three-year normal school course shall be applied in case they are deemed of equivalent merit, in the College of Education, to courses leading to certificates for supervisors in elementary grades, as principals in state graded schools, as teachers in junior high schools or in normal school departments in high schools; students coming from the three-year course in normal schools shall not receive certificates in high-school subjects from the University without completing the prescribed courses of the University of Minnesota for such certificates.

Normal school graduates desiring admission to the College of Education must present a recommendation from the president of the normal school from which they were graduated, together with a record of the courses pursued and grades received.

Students admitted to the College of Education from normal schools will not be permitted to elect the following courses for credit: Education 1; Psychology 1-2, or 5.

For a statement of records to be submitted, see Bulletin of General Information, pages 27 to 28.

## CLASS ROUTINE AND SCHOLASTIC REQUIREMENTS

The following regulations refer chiefly to undergraduates; graduate students should consult the bulletin of the Graduate School.

Classes are held mornings and afternoons of every week-day except Saturday afternoon. (For teachers' afternoon and Saturday classes see page 18.)

No student may elect work during any semester in more than five departments. Students must elect at least fourteen hours a week. Students may ordinarily elect not more than seventeen credit hours. A student who has, during the preceding semester or two semesters, earned an average of one and one-half honor points for each credit hour taken and who has had no condition or failure the preceding semester, may elect eighteen hours, upon the approval by the Administrative Board of a petition for permission to do the same. For explanation of credit hours and honor points, see page 15.

Students whose absences exceed four weeks in the aggregate during a semester are not permitted to take the semester examinations without permission of the Administrative Board. Any student reported below grade in sixty per cent of his work, or in three subjects, at the middle or close of the first semester or middle of the second semester is dropped from the rolls and not allowed to re-enter the University until the opening of the following year.

Examinations are held at the close of each semester. A student's grade is based upon his class work and examination. Four passing grades are given, namely A, B, C, D. Work not done satisfactorily is marked 1 (incomplete), E (condition), or F (failure). An incomplete must be removed within one month after the opening of the following semester; otherwise it becomes a condition.

A failure must be removed by pursuing the work again in class the next time the course is offered.

#### CERTIFICATES

##### *Required in Minnesota*

Every teacher in the Minnesota public schools must have a valid certificate before he can be lawfully employed. Two classes of certificates are of interest to university students:

1. A first grade professional certificate renders its holder eligible for the following positions: (1) superintendent of schools (if candidate has had previously two years' experience in supervising grades); (2) principal of a graded or high school; (3) instructor in any high-school subject, except those subjects which demand special certificates.

2. A special certificate authorizes the holder to teach the special subjects indicated on the certificate. The University prepares students for special certificates in: (1) art; (2) agriculture; (3) commercial subjects; (4) drawing; (5) home economics; (6) manual training; (7) physical education; (8) public school music.

3. High-school training and teacher-librarians. In addition to the courses preparing for special certificates, the College of Education offers courses to prepare teachers for high-school rural training departments

and high-school teacher-librarians. The State Department issues no special certificates for these two classes of teachers, but gives an official endorsement to students who complete these courses in the College of Education. The College of Education grants persons completing these courses a special diploma.

#### *The University Teachers' Certificate*

1. Two-year certificate. The University teachers' certificate is valid for two years as a first grade professional certificate. Holders are eligible for all positions open to holders of the first grade professional certificate named above. The courses leading to this certificate are described on page 21.

2. Life certificates. After two years' of successful teaching experience, the University teachers' certificate may become a life certificate, upon endorsement by the State Department of Education and the President of the University. This two years' experience must be gained within Minnesota. Graduates who teach in another state may, upon returning to Minnesota, apply to the State Department of Education for an extension of their University teachers' certificate for two years at the completion of which application may be made for a permanent life certificate. The fee for this extension is \$1. Holders of the University teachers' certificate who wish to have their certificate made a permanent life certificate should apply directly to the State Department of Education, St. Paul, for a permanent endorsement of the certificate. The fee for this endorsement is \$5.

#### *Regulations Governing the Issuance of Certificates*

1. All inexperienced students desiring the University teachers' certificate (described on page 21) are required to comply with the University requirements for this certificate. This certificate shall specify the major and minor subjects the student is qualified to teach.

2. Mature and experienced undergraduates may petition the Administrative Board to be excused from certain of the prescribed courses for the regular University teachers' certificate, but their petition must be approved by the Department of Education and the petition must be accompanied by a statement showing that the student has been a successful teacher in certain high-school subjects. These students will be required to complete satisfactorily prior to graduation at least fifteen hours of work in education. The education courses which they shall be privileged to carry will be determined entirely upon the recommendation of the Dean of the College of Education or the Department of Education.

3. Graduates of normal schools or of other institutions registered in the College of Education who do not desire to become high-school teachers, but who desire a more liberal training for elementary school work, may be relieved from complying with the regular requirements for a

University teachers' certificate, but they will not be relieved from carrying at least fifteen hours of work in education. Such persons at graduation will be granted a special teachers' certificate describing their courses and indicating the types of positions for which they are qualified.

4. Students desiring to qualify as public school administrators will be granted a certificate upon completion of a course leading to such a certificate, but no student shall be eligible to such a certificate unless he has completed at least twenty-four hours of work in education, at least twelve of which must have been taken at the University of Minnesota.

5. Teachers and supervisors of public school music, of physical education, of manual training, of home economics, of agriculture, and of such special subjects as may later be included in the program of the College of Education will be granted a special teacher's or supervisor's certificate upon completing a prescribed course leading to such a certificate.

6. Students desiring to qualify as heads of teacher-training departments in high schools will be granted a certificate upon the completion of a course leading to such a certificate.

7. Students desiring to qualify as teachers of defective or supernormal children will be granted a certificate upon completion of a course leading to such a certificate.

8. Students regularly enrolled for graduate work with education as a major will, upon the completion of the requirements for an advanced degree, be recommended for a University teachers' certificate.

9. Students regularly enrolled for graduate work with education as a minor, who desire a University teachers' certificate, will be required to complete the course prescribed for such a certificate, unless they have already met the requirements or their equivalent for the certificate in their undergraduate careers.

#### THE DEGREE OF BACHELOR OF ARTS (IN EDUCATION)

The degree of Bachelor of Arts (in Education) will be conferred by the College of Education upon any student who fulfills all the requirements stated below during the years 1918-19 and 1919-20, but beginning with the year 1920-21 students graduating from the College of Education will receive the degree of Bachelor of Science (in Education).

#### *Summary of Requirements*

1. Amount and grade of work. During his entire course the student must earn: (a) one hundred and twenty credit hours in addition to the required exercises in drill, gymnasium, and physical education; (b) one hundred and twenty honor points; (c) one and one-half honor points per credit hour in his major subject.

2. Courses required and allowed. (a) The student must have completed (normally during sophomore year) a general introductory course in Psychology (e.g. Psychology 1-2, or 5, or an equivalent of the same);

(b) he must have satisfied all the requirements for a teachers' certificate (see page 21) except as hereinafter provided:

(1) Students *already holding a first grade professional certificate will be excused from complying with the University requirements for the certificate*, but they will be required to carry an equivalent number of courses in Education.

3. Distribution of work—majors and minors. A student must take a sufficient number of courses so distributed among at least three distinct departments concerned with the work of the secondary school as to secure one major and two minors. Either education or psychology may be counted as a major or a minor in this group.

4. Residence. At least thirty credits must be earned by residence in this college. If the term of residence is only one year, that year must be the senior year; and in any case, at least half of the work of the senior year must be done in residence. Attendance at summer sessions counts as residence.

#### *Explanation of Requirements*

The amount of work pursued by a student is estimated in credit hours; the quality or grade of his work, in honor points.

A *credit hour* is one hour per week of recitation or lecture work extending throughout one semester, or three hours per week of laboratory work through one semester. It is assumed that each credit hour will demand on the average three hours a week of the student's time for recitation or lecture, one hour in class and two hours of preparation; for laboratory courses, three hours in the laboratory.

*Honor points* are computed as follows: each credit hour with the grade of A entitles the recipient to three honor points; each credit hour with the grade of B entitles the recipient to two honor points; each credit hour with the grade of C to one honor point; each credit hour with the grade of D to no honor points. Illustration: A student completing a one-semester three-credit course and receiving the grade A would be entitled to nine honor points; if receiving the grade of B to six honor points; if receiving the grade of C to three honor points; if receiving the grade D to no honor points.

Students wishing to fit themselves for elementary school work may be graduated from the College of Education without completing the requirements for a teachers' certificate in a secondary subject. In every case, however, the student must petition for this privilege. In each instance the student will be expected to earn from eighteen to twenty-four credits in a major field and twelve in each of the two minor fields.

#### GRADUATION WITH DISTINCTION

The degree of Bachelor of Arts in Education with Distinction is granted to graduates of this College who fulfill the following conditions:

- A. Special excellence in major subject.
- B. Application for the degree with distinction should be made at the time of entering the College, but may, however, be postponed until the opening of the senior year.
- C. At the time of application the student shall, after conference with the Dean of the College of Education, or some other member of the Faculty appointed for that purpose, select a subject for his thesis, which must be formally approved and recorded.
- D. The presentation of a satisfactory thesis upon some subject within the major field of study not later than May 1, senior year.
- E. At the time of application the student must have an average of one and one-half honor points per credit hour in all previous work.
- F. At the time of graduation the student must have met all conditions applying to the Bachelor's degree in Education; must show a record of one and one-half honor points per credit hour in *four fifths of all work pursued throughout his entire course; and*
- G. Must be recommended to the Faculty for the degree with distinction, which recommendation must be approved by the vote of the Faculty of the College.

In the case of honor students wishing to qualify for the teacher's certificate, it is understood that they shall be required to elect not more than fifteen credits in Education, such fifteen credits to include all of the prerequisite work in Psychology. As the prerequisite work in Psychology is now six credits instead of three it will mean that at the present time honor students will be required to elect in addition to six credits in Psychology, only nine credits in distinctly Education courses. These courses will include Practice Teaching, Technique of Teaching, and two teachers' courses.

#### GRADUATE WORK IN EDUCATION

*Graduate study.* Graduate courses in Education leading to the degree of Master of Arts or Doctor of Philosophy may be pursued in the Graduate School. Students who desire to undertake graduate work with Education as a major must have had at least a year's work in Psychology, and, in addition to this, a total of not less than twelve credits in Education. Students who desire to undertake graduate work with Education as a minor must have at least a year's work in Psychology, and, in addition to this, a total of not less than six credits in Education. Graduates, holding a Bachelor's degree, who have less than twelve credits in undergraduate courses in Education, will be obliged to increase the number of credits required for a major or a minor in Education by the difference between twelve and the number of undergraduate credits in Education which they present. Such students will not, however, be barred from counting all the time spent at the University toward satisfying the residence requirement of graduate work, provided the work which they pursue is approved by the Dean of the Graduate School.

During summer sessions graduate work may be pursued. The Master's degree may ordinarily be completed in four summer sessions. For full statement of regulations, consult Graduate School bulletin.

#### TEACHING ASSISTANTS IN MINNEAPOLIS PUBLIC SCHOOLS

The College of Education in coöperation with the Minneapolis schools has adopted a plan which provides for employing in the Minneapolis high schools a certain number of university graduates to be known as "teaching assistants." The adoption of this plan is in essence the establishment in the Minneapolis public schools of a certain number of teaching fellowships for graduate students. These teaching assistants will receive a compensation for their work in the schools proportionate to the amount of time devoted to teaching; \$300 for the first year; \$400 for the second year.

For each assistant a definite course, combining graduate professional study and teaching experience will be outlined. Although the plan provides an abundance of teaching experience, the greater emphasis will be thrown upon advanced professional study.

*Work in Minneapolis schools.* Teaching assistants shall be on duty at the schools from 8:30 until 12:15. Their work will be divided between teaching and assisting. During their first year they shall instruct not more than two classes per day, that is, one third of a regular teacher's teaching periods. If they continue a second year, the portion of their time devoted to class instruction may be increased to three periods a day. Their work as teaching assistants shall be limited to the hours during which they are on duty in the schools and no additional work other than preparation for teaching their regular courses shall be required of them outside of the above set schedule of hours.

*Applications for positions* as teaching assistants should be made directly to the principal of the University High School. The number of such positions can not be absolutely determined in advance of the opening of the schools.

#### COÖOPERATION WITH STATE DEPARTMENT OF EDUCATION

Arrangements have been made whereby a few students of superior ability who are interested in problems relating to the administration of state systems of education may carry on a limited part of their work in the office of the State Superintendent of Education. This office now has at its command a very valuable library, a great mass of original material, and the services of a number of competent men and women who are devoting themselves to the administration and supervision of:

- (a) The description of state's moneys for the support of public education.
- (b) The inspection of rural, elementary, and secondary schools.
- (c) Construction of buildings.
- (d) Training of teachers.

It is understood that in case any students are recommended for this work, the recommendation must be made by the Department of Education of the University of Minnesota, and that such students, in case they are to receive credit for graduate work in the University of Minnesota, will be expected to work under the supervision of the State Department of Education and the Department of Education in the University of Minnesota and that in each instance, the student will be required to do a specific and intensive piece of work.

#### SPECIAL OPPORTUNITIES FOR TEACHERS IN SERVICE

Afternoon and Saturday morning classes, correspondence lessons, extension classes, and the summer session are the chief channels through which the College of Education seeks to discharge its obligation to teachers in service.

##### *Afternoon and Saturday Classes*

A special announcement of late afternoon and Saturday morning classes arranged especially for teachers, together with a statement of the requirements for admission and method of registration will be issued by the College of Education early in October.

##### *Teacher Training through Extension Courses*

The General Extension Division offers excellent opportunities for teachers and others to pursue courses carrying credit for the Bachelor of Arts degree or for the professional state teachers' certificate, either by correspondence lessons or by joining an extension class. For further information address the General Extension Division, University of Minnesota.

##### *Summer Session*

The summer session conducted by the University offers unusual opportunities for professional training to undergraduates, graduates, superintendents and principals, teachers in service, and candidates for first grade and second grade state professional certificates. The summer session of 1919 will begin Monday, June 16.

#### EMPLOYMENT BUREAUS

*Appointment Bureau.* The University of Minnesota maintains an Appointment Bureau which endeavors to place graduates of the University of Minnesota in positions best suited to their training and experience. Students looking forward to teaching should register during the first semester of their senior year. No fee, however, will be charged to

those who register before February 15. Complete instructions and registration blanks should be secured at the office of the Appointment Bureau. During the year 1918-19, the general office of this Bureau will be located in the College of Education Building, Room 110. Special offices, however, will be maintained at the College of Agriculture, Forestry, and Home Economics under the direction of Professor A. V. Storm for those desiring to teach agriculture or domestic science.

*State Teachers' Employment Bureau.* The State Teachers' Employment Bureau, located in the State Historical Building, St. Paul, under the direction of Mr. E. T. Critchett, offers its services to all teachers and prospective teachers. The fee for registration is \$3.

Neither the University of Minnesota nor the State Teachers' Employment Bureau exacts any commission.

## COURSES OF STUDY

### DEPARTMENT

Every course listed in this bulletin counts in the College of Education.

#### GUIDANCE IN THE SELECTION OF COURSES

##### *Superintendents and Graded School Principals*

It is desirable that prospective superintendents and principals of graded schools, before entering upon their duties, shall have had courses in school administration and school supervision in some recognized normal school or college. Students who wish to qualify for a supervisor's certificate will be required to earn twenty-four credits in the following courses: Education 3a or b, 11a or b, 105, 106, 109, 114, 119, 121a or b, 123, 124, 134, 135, 136, 141, 142, 203-204, and 205-206. Of the above courses the following are required for this certificate: 109, 121a or b, 123, 124, 134.

##### *Graduate Students*

All courses bearing numbers of 100 and above are open to graduate students. Before attempting to make out their programs, graduate students in Education should consult the Dean of the College of Education and the Dean of the Graduate School. Attention is called to the fact that Course 125 is ordinarily required of all candidates for advanced degrees. Courses bearing numbers 200 and above are open to graduate students only.

All graduate students majoring in Education are required to meet with the department staff every alternate Monday evening from 7:15 to 9:00 for conference regarding subjects of original investigation. This work carries no credit. See also page 16 of this bulletin.

##### *Candidates for State Professional Certificates*

Unclassed students, candidates for the state professional certificate, may pursue courses in residence or by correspondence or in extension classes. For guidance in the selection of courses relating to this certificate, consult statement, State Professional Teachers' Certificate, page 21.

##### *Undergraduates*

Students should consult carefully the departmental descriptions of courses required for admission to teachers' course. The teachers' course in each subject must be taken in advance of or contemporaneously with

practice teaching. For some subjects more than a minor is required for admission to teachers' courses in the case of students who wish to offer the subject only as a minor.

See the following topics in this bulletin: (1) University teachers' certificate, page 21; (2) major and minors, page 15; (3) special training courses, page 23; (4) admission, page 9; (5) prerequisites for teachers' courses, page 23.

#### THE UNIVERSITY TEACHERS' CERTIFICATE

Beginning with the year 1919-20 students entering the junior class expecting to receive the teacher's certificate from the University of Minnesota shall be registrants in the College of Education.

All candidates for the teacher's certificate who are registered in other colleges, who expect to graduate in 1918-19 or 1919-20 may continue their registration in these colleges if they so desire.

All students without teaching experience, desiring a University teacher's certificate will be required to comply with the requirements listed below. Such students will also be required to complete a two years' course leading to the degree of Bachelor of Arts (in Education).

Candidates for this degree may major in any department offering work in the College of Education.

Recipients of the degree of Bachelor of Arts (in Education) and of the University teachers' certificate may, by a proper selection of studies during their regular course, become eligible for recommendation or endorsement for one of the special certificates described on pages 13 to 14.

#### *Prescribed Course of Study for University Teachers' Certificate*

The College of Education has adopted the prescribed course of study outlined below, for the University teachers' certificate, and for the degree of Bachelor of Arts (in Education).

No.	Title	Credits	To Be Taken Semester	Year
1.	Brief History of Education..... or	3	1 or 2	Jr.
101-102.	History of Education.....	6	1 and 2	Jr.
3.	Social Aspects of Education.....	3	1 or 2	Jr.
55.	Educational Psychology.....	3	1 or 2 or 3	Jr.
11.	Technique of Teaching.....	3	1 or 2	Sr.
15.	Practice Teaching..... (See statement below)	3	1 or 2	Sr.
	Teachers' course (i.e. courses in special methods covering one or more high-school subjects and totaling at least three credits.....	3	1 or 2 or 1	Jr. Sr.

A general introductory course in Psychology is a prerequisite for all courses in Education, except those now offered in the Department of Agricultural Education and in the Department of Home Economics Education. Credits gained by it, however, are not counted as professional credits toward the teachers' certificate.

*Graduates of normal schools* who, upon entering the College of Education, receive credit for any of the courses specified above will be allowed to elect in the place of the same other strictly professional subjects.

#### PRACTICE TEACHING—PREREQUISITES

Opportunity for practice teaching is provided in part by the University High School and in part by the Minneapolis city schools.

Education 1 or 101-102, 3, 11, and the teachers' course in the department in which the student wishes to do practice teaching, together with all subjects required by the department concerned as prerequisite to the teachers' course (see departmental statement) are prerequisite to the course in practice teaching. In cases where the teachers' course extends throughout two semesters, students will in exceptional cases be permitted to do their practice teaching during the second semester of their teachers' course.

#### ADMISSION TO PRACTICE TEACHING

##### *Application and Credentials*

No student will be permitted to do practice teaching who has not been definitely recommended by the department in which the subject lies as being well prepared from the standpoint of subject matter.

All assignments to practice teaching are made by the Principal of the University High School. Before registering for this work students must consult with him and submit: (1) the departmental recommendation referred to above and (2) a statement from the Registrar showing the courses they are offering as prerequisites including, (a) the courses in Education, (b) the courses in the department concerned. This statement must show when these courses were taken and the grade received and it must be followed by a formal statement that the student has satisfied all the prerequisites for practice teaching. Special blanks for this purpose may be secured at the office of the high-school Principal.

Students at the College of Agriculture, Forestry, and Home Economics desiring to qualify as teachers will be required to comply with the usual requirements for practice teaching. Arrangements for this work will be made by Professor Storm and Miss Berry.

*Credits allowed in Agriculture and Home Economics.* A maximum of eighteen credits is elective from courses in agriculture and home economics, but it should be noted that prospective teachers of these subjects must secure from the State Department of Education in advance of their contract to teach, a special certificate in the subject concerned.

## SPECIAL TRAINING COURSES

## DEPARTMENT OF AGRICULTURAL EDUCATION

The special professional courses offered by the College of Education for the preparation of teachers, superintendents, and supervisors of agriculture are given in the Department of Agricultural Education at University Farm. (See departmental statement, pages 46 to 50.)

## COMMERCIAL TRAINING

The demand for university graduates as commercial teachers has been greater than the University has been able to meet. A new requirement of the State Department that teachers of commercial subjects must be college graduates will intensify this demand. The University has as yet made no arrangements to offer the technical subjects required for this work, such as stenography, typewriting, penmanship, bookkeeping, etc. Nevertheless, by a proper selection of courses in English, rhetoric, foreign language, history, economics, psychology, and education, students who have secured a knowledge of the technical subjects elsewhere can get a broad and sound foundation for this work during the university course.

## DEPARTMENT OF HOME ECONOMICS EDUCATION

The special professional courses offered by the College of Education in home economics for the training of teachers of home economics are given by the Department of Home Economics Education at University Farm. (See department statement, page 50.)

## MANUAL TRAINING

Students looking forward to teaching manual training may, under the present arrangements, offer manual training as a minor in the College of Education. Under manual training in the departmental statement will be found a prescribed course of study to be required of all students whom the College of Education will recommend for certificates as teachers of manual training. (See department statement, pages 53 to 55.)

## HIGH-SCHOOL TEACHER-TRAINING DEPARTMENTS

The College of Education offers a definite course of study for the preparation of teachers for high-school teacher-training departments. This course is open only to teachers who have had two years of rural teaching experience and who in addition to this are graduates from the advanced course of a Minnesota state normal school or who possess equivalent professional preparation.

NOTE: To this second requirement, exceptions may be made in the case of teachers already engaged in high-school training departments and in certain other individual cases where circumstances justify the same.

Ordinarily two years will be required to complete this course. However, teachers already engaged in high-school training departments and holding first grade professional certificates and who are unable to absent themselves from their duties for more than a year will be permitted to deviate from the prescribed course of study and to elect such subjects as will be of most immediate use to them in their work.

Students who complete the course offered by the College of Education for teachers of training departments will be eligible for the endorsement of the State Department of Education as heads of training departments in high schools. The course as outlined (see pages 57 to 58) provides Education as a major study, with Economics and English as minors. The selection of these two subjects as minors has been based upon the nearness of their relation to the work of the rural school teacher. The Education courses are all required, but other minors may be selected upon approval. The attention of teachers desiring to become teachers in high-school training departments is called to the following rules recently passed by the High School Board which provides that after 1918 all candidates for this work shall be both normal school and college graduates.

#### TRAINING COURSE FOR HOME VISITORS AND VOCATIONAL ADVISERS

For description of this course, see pages 52 to 53.

#### KINDERGARTEN AND ELEMENTARY TEACHERS

The College of Education offers opportunity for advanced study to teachers who have had adequate normal school training and who wish to take further preparation for work as principals, supervisors, or teachers of elementary schools. A special certificate will be granted to normal school graduates who spend two years in the College of Education taking advanced work for the purpose of becoming better teachers of elementary schools. The following agreements between the presidents of the state normal schools of Minnesota and the Executive Faculty of the College of Education, reached at an informal conference, April 3, 1915, make it possible for students in the College of Education, who discover during their course that their taste and ability lie in the elementary field, to transfer from the College of Education to one of the normal schools at the opening of their senior year and thus prepare themselves as elementary teachers or as kindergartners without loss of time.

#### *Agreements between Normal Schools and College of Education*

1. That less than one year of residence at a state normal school for the purpose of preparing for kindergarten or elementary school work would not be adequate.

2. That the normal schools would be willing to confer their regular diploma upon university students coming to them from the College of Education, who had had three years of college work, upon the satisfactory completion of one year in the normal schools.
3. That these provisions be limited to students previously registered in the College of Education.
4. That they should not apply to students who had entered the College of Education upon the basis of normal school credits.

**PUBLIC SCHOOL MUSIC**

See Courses 27-28 under statement of Department of Music.

**TRADE AND INDUSTRIAL EDUCATION**

The Department of Education will offer special instruction in trade and industrial education for persons who wish to qualify to teach under the Smith-Hughes Act. The description of courses in this field will be found on pages 34 to 42.

## DEPARTMENTAL STATEMENTS

### DEPARTMENT OF ART EDUCATION†

Assistant Professor RUTH RAYMOND; Assistants HELEN MARR, HAZEL SMALL, FLORENCE D. WILLETS.

On December 11, 1917, the Regents of the University of Minnesota voted to take over the Handicraft Guild which has been operating as an independent institution in the city of Minneapolis and to place it in charge of the College of Education of the University of Minnesota, with the understanding that the Guild would be financed during the years 1917-18 and 1918-19 from its tuition fees and by the Civic and Commerce Association of Minneapolis. On April 7 the Executive Faculty of the College of Education approved the program printed below as leading to a Bachelor's degree in the College of Education. This curriculum will be open to students in the University of Minnesota beginning with the freshman year. Such students will be registrants in the College of Education. They will be required to pay a fee of \$25.00 each semester.

Recommendation for a supervisor of art in grades and high schools or for departmental art teacher requires:

48 credits in art

24 credits in supporting subjects

16 credits in Education (including Art Education courses)

12 to 24 credits in selected minor (See departmental statements)

8 to 20 credits elective.

#### COURSES

No.	Credits	Title	Offered to	Prereq. course
31-32	6	*Fundamental Principles of Design.....	All	None
		9, 10 TThS		
33-34	6	Freehand Drawing and Composition.....	All	None
		9, 10, 11 MWF		
35	1	*Clay Modeling.....	All	None
		1, 2, 3 W		
36	1	*Book Binding.....	All	None
		1, 2, 3 W		
37	1	*Weaving and Basketry....	All	None
		1, 2, 3 T		
38	1	*Block Printing and Stenciling.....	All	None
		1, 2, 3 T		

\* These courses are especially recommended to women over twenty-six years of age who desire to qualify as teachers of Occupational Therapy for overseas and for work in hospitals in this country.

† Registration in College of Education.

No.	Credits	Title	Offered to	Prereq. courses
39-40	6	*Principles of Harmony in Form and Color..... 9, 10 TThS	Soph., jr., sr.	AE31-32 or HE 51a,b
41-42	4	Freehand Drawing..... 9, 10, 11 MF	Soph., jr., sr.	AE 33-34
43	3	*Pottery..... 9, 10, 11 W and ar	Soph., jr., sr.	AE 31-32
44	3	*Metal..... Ar	Soph., jr., sr.	AE 31-32
64	3	*Wood..... Ar	Soph., jr., sr.	AE 31-32
47	3	Art Needlework..... 1, 2, 3 WF	Soph., jr., sr.	AE 31-32
45-46	6	Commercial Design..... (3-3) 10, 11 T 9, 10 ThS	Jr., sr.	AE 31-32, AE 41-42
48	3	Wood Block Printing..... 1, 2, 3 TTh	Jr., sr.	AE 31-32, AE 41-42
53-54	6	Design for the Consumer.. 1, 2 MWF	Soph., jr., sr.	AE 41-42 or He 51a,b, AE 33-34
	3	†Costume Design.....	Jr., sr.	HE 1a,b, HE 11 a,b,
	3	†Mechanical Drawing.....		AE 31-32 or HE 51a,b,
	2	†Mechanical Drawing.....		AE 33-34
61-62	6	§Advanced Drawing..... (3-3)		AE 31-32, AE 33-34, AE 41-42

## REQUIRED SUPPORTING COURSES

No.	Credits	Title	Offered to	Prereq. course
Psychol. 1-2	6	Psychology.....	Soph., jr., sr.	None
English 1-2	6	Rhetoric.....	Fr., soph.	None
H.E.1a,b	3	†Textiles.....	Fr., soph.	None
Hist. 1-2	6	History Gen. Survey	All	None
AE 63-64	4 (2-2)	Art History (ar)...	All	None
Chem. 1-2	6	††General Chemistry.	All	None

## MINOR IN EDUCATION

## B.S. DEGREE IN EDUCATION WITH MAJOR IN ART EDUCATION

No.	Credits	Title	Offered to	Prereq. courses
1-2	6	General Psychology..	Soph., jr., sr.	.....
AE 56	3	Teachers' Course in Art	Jr., sr.	Psychol. 1-2, AE 31-32, AE 33-34, AE 39-40, AE 41-42, 4 cr. in handicrafts
		9, 10, 11 WF		
Educ. 3	3	Social Aspects of Education.....	Jr., sr.	Psychol. 1-2

\* These courses are especially recommended to women over twenty-six years of age who desire to qualify as teachers of Occupational Therapy for overseas and for work in hospitals in this country.

† Given in Home Economics.

‡ Given in Manual Training.

§ Given in Architecture.

|| If General History is not offered for entrance.

†† When the Minor is in Home Economics.

When Chemistry is not offered for entrance.

Minor in Education.

No. Credits	Title	Offered to	Prereq. courses
Educ.1a,b	3 Brief Course in History of Education.....	Jr., sr.	Psychol. 1-2
AE 57-58	2-2 Practice Teaching ....	Jr., sr.	Psychol. 1-2, AE 31-32, AE 33-34, AE 39-40, AE 41-42, 4 cr. in handi- crafts
Educ. 11a,b	3 Technique of Teaching	Jr., sr.	Psychol. 1-2

## REQUIREMENT AT LEAST SIXTEEN CREDITS

Suggested minor subjects to be taken with the major in drawing and design, and the credits required (see departmental statements in Bulletin of the College of Education).

	Minor	Credits
Manual training .....	"	18
Music .....	"	12
English .....	"	21
History .....	"	18
Biology .....	"	12
Physiology .....	"	12
Latin .....	"	15
Greek .....	"	12
Romance languages .....	"	24
Scandinavian .....	"	24
Physical education .....	"	15 plus non-credit courses
Physics .....	"	14
Political science .....	"	12
Sociology .....	"	12
Home economics .....	"	18
Social service		
Chemistry		
Mathematics		

## DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND SUPERVISION

Professors LOTUS D. COFFMAN, ALBERT W. RANKIN, RAYMOND W. SIES,  
FLETCHER H. SWIFT; Instructor.....; Assistant.....

## COURSES

No. Credits	Title	Offered to	Prereq. courses
3a 3	Social Aspects of Education 4 MWF	Jr., sr. 204Ed	Psychol. 1-2 .....
3b 3	Social Aspects of Education 8 MWF	Jr., sr. 204Ed	Psychol. 1-2
3bt 3	Social Aspects of Education 8-9:50 S 1 hour ar	Teachers 111Ed	Rafkin Psychol. 1-2 Rankin

No.	Credits	Title	Offered to	Prereq. courses
5	3	The American School . . . 8:55-9:40 TThS 9:50-10:30 TThS	Jr., sr.	Psychol. 1-2
113	2	Secondary Education Movements (not offered in 1918-19) . . .	Coll. of Agr. Swift	
119	3	School Curricula . . . 4 MWP	Coll. of Agr. Swift	
121a	3	School Organ and Admin. . . 3 MWP	Jr., sr., grad.	1 or equiv.
121b	3	School Organ. and Admin. . . 3 MWP	205Ed	1 or 101-102 and 3
123	3	Theory of Supervision . . . 11 MWP	Sr., grad.	Rankin
124	3	Educational Administration . . . 3 MWP	205Ed	1 or 101-102 and 3
141	3	School Sanitation . . . 8 MWP	Sr., grad.	1 or 101-102 and 3
205-206	4	Seminar in Educational Administration . . . 4-5:30 W	204Ed	Rankin
207-208	4	Seminar in American School . . . 4-5:30 Th	Grad.	124, 125
			203Ed	Sies
			Grad.	1 or 101-102 and 3
			203Ed	Swift

3a.b. **SOCIAL ASPECTS OF EDUCATION.** The school as a community factor; the present peculiar relation of the school to social problems; the function of the school in these relations. **RANKIN.**

3bt. **SOCIAL ASPECTS OF EDUCATION.** Same as above for teachers. **RANKIN.**

5. **THE AMERICAN SCHOOL.** A brief survey of the factors determining the problem of public education in America, followed by a brief account of the development and organization of typical state school systems. **SWIFT.**

113. **SECONDARY EDUCATION MOVEMENTS.** Some of the movements considered are: changed concepts of method, reorganization as affecting the grades below the high school and work beyond the four years of high school, supervised study, socialization of curricula, public control. (Not offered in 1918-19). \_\_\_\_\_.

119. **SCHOOL CURRICULA.** Study of the ideas implicit in a democratic society and an attempt to apply those ideas in the selection of material of school curricula. This will involve some consideration of the constructive aims and methods of education. **RANKIN.**

121a. **SCHOOL ORGANIZATION AND ADMINISTRATION.** An introductory course in school administration for students of teaching experience and for those looking forward to work as principals and superintendents. **RANKIN.**

121b. Same as 121a. **RANKIN.**

123. THEORY OF SUPERVISION. The problems involved in the training of teachers in service; studies of qualities of merit in teachers; factors in service; factors in selecting teachers; the distribution of subject matter by grades; time allotment of studies. SIES.

124. EDUCATIONAL ADMINISTRATION. The interpretation of present tendencies in the administration of state and city school systems. SIES.

141. SCHOOL SANITATION. A course in school hygiene in its broader aspects. Designed for all teachers and supervisors who are responsible for the health of school children. Treats of medical supervision and other problems arising from school environment. RANKIN.

205-206. SEMINAR IN EDUCATIONAL ADMINISTRATION. SIES.

207-208. SEMINAR IN AMERICAN SCHOOL. Research course devoted to intensive study of certain factors determining the problem of public education in America. The following may be considered typical problems: school population, teaching population, education of the immigrant, elementary school support. SWIFT.

#### DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

Professor MELVIN E. HAGGERTY;\* Assistant Professors HERMIONE L. DEALEY, MARVIN J. VAN WAGENEN; Assistants JUDITH JACOBS,

#### COURSES

No.	Credits	Title	Offered to	Prereq. courses
105	3	Educational Psychology... 11 MWF	Sr., grad. 202Ed	Psychol. 1-2 Van Wagenen
106	3	Educational Psychology... 11 MWF	Sr., grad. 202Ed	Psychol. 1-2 Van Wagenen
109	2	Educational Diagnosis.... 10-11:40 S	Sr., grad. 204Ed	Psychol. 1-2 Van Wagenen
110	3	Psychology of Secondary School Subjects..... 4 MWF	Sr., grad. 204Ed	Psychol. 1-2 Van Wagenen
114	2	Psychology of Learning... 8-9:40 S	Sr., grad. 204Ed	Psychol. 1-2 Van Wagenen
115	2	Psychology of Elementary School Subjects..... 8-9:40 S	Sr., grad. 111Ed	Psychol. 1-2 Van Wagenen
125	2	Methods in Educational Research..... 4-6 T	Sr., grad. 111Ed	1 or 101-102 and 3 Van Wagenen
134	2	Mental Diagnosis..... (not offered in 1918-19)	Sr., grad.	Psychol. 1-2
135	2	Mental Tests..... 2-4 WF	Jr., sr., grad. 202Ed	Psychol. 1-2 Dealey
136	2	Experimental Education... 4-6 Th	Sr., grad. 202Ed	Psychol. 1-6 Van Wagenen

\*Absent on leave.

No.	Credits	Title	Offered to	Prereq. courses
137-138	1 to 6	Psycho-Educational Clinic.	Sr., grad.	Psychol. 1-2; Ed. 109, 134, or 135.
		12:30-2:30 MWF	126-128 MH	Van Wagenen, Dealey
203-204	4	Seminar in Educ. Psychol. (not offered in 1918-19)	Grad.	105

105. **EDUCATIONAL PSYCHOLOGY.** Advanced work in genetic psychology, origin and nature of human organism, origin, development, control of instincts; their relations to group activities; the relation of instincts to the formation of habits; introductory to psychology of learning. **VAN WAGENEN.**

106. **EDUCATIONAL PSYCHOLOGY.** Psychology of learning. Methods of measuring rate of learning; study of typical learning experiments and an examination of the conditions of the most economic learning, study of individual differences, and psychology of the school subjects. **VAN WAGENEN.**

109. **EDUCATIONAL DIAGNOSIS.** The typical educational problems involving educational scales and standard tests. Nature of the tests, methods of their use, analysis of results obtained, and programs of remedial educational procedure based on the results of the test. **VAN WAGENEN.**

110. **PSYCHOLOGY OF SECONDARY SCHOOL SUBJECTS.** Review of experimental results dealing with content of high-school curriculum, with a discussion of the bearing of these results upon selection of the content of the high-school subjects and the methods of presenting it effectively. **VAN WAGENEN.**

114. **PSYCHOLOGY OF LEARNING.** Analysis of various elements entering into the learning process of children; discussion of the part played by these elements in learning subject-matter of elementary school curriculum, and the practical bearing in planning of classroom activities. **VAN WAGENEN.**

115. **PSYCHOLOGY OF ELEMENTARY SCHOOL SUBJECTS.** Review of experimental results dealing with elementary school subject-matter; a discussion of the direct bearing of these findings upon selection and method of presentation of the content of various subjects of the elementary school curriculum. **VAN WAGENEN.**

125. **METHODS IN EDUCATIONAL RESEARCH.** A study of statistical and other methods as applied to educational investigation. This course is ordinarily required of all candidates for advanced degrees. **VAN WAGENEN.**

134. **MENTAL DIAGNOSIS OF SCHOOL CHILDREN.** Study of mental variation in children, its nature, degree, causes, and effects. Also an introductory series of lectures on anatomy, physiology, and pathology of

childhood. Methods of treating superior and sub-normal children in the schools. (Not offered in 1918-19).

135. **MENTAL TESTS.** A study of individual differences by means of mental tests. Laboratory work in giving and taking tests introductory to the use of group tests for the measurement of age-level, etc. **DEALEY.**

136. **EXPERIMENTAL EDUCATION.** The application of experimental methods to educational research. Problems in mental measurement, educational and mental diagnosis, and the psychology of learning will be set as individual problems for properly prepared students. **VAN WAGENEN.**

137-138. **PSYCHO-EDUCATIONAL CLINIC.** The psycho-educational clinic is conducted in close coöperation with the Medical School clinics in pediatrics and nervous and mental diseases. Students taking this course will be given work in the mental examination and diagnosis of individual cases, and practical experience in the use of standardized tests, studies of family history, and investigation of school records. Each student will be expected to make a detailed study of a number of individual cases and to assist in carrying out prescribed treatment in such cases. **VAN WAGENEN, DEALEY.**

203-204. **SEMINAR IN EDUCATIONAL PSYCHOLOGY.** A research course for graduate students. Topic for year 1917-18, Educational and Mental Diagnosis of School Children. Required of all students writing theses in educational psychology and related topics. \_\_\_\_\_.  
(Not offered in 1918-19.)

#### DEPARTMENT OF THE HISTORY AND PHILOSOPHY OF EDUCATION

Professor FLETCHER H. SWIFT; Instructor JEAN H. ALEXANDER; Scholar

##### COURSES

No.	Credits	Title	Offered to	Prereq. courses
1a	3	Brief Course in Hist. of Education.....	Jr., sr.	Psychol. 1-2
	8	TThS	205Ed	Alexander
	9	TThS	205Ed	Alexander
	9	MWF	205Ed	Alexander
	10	MWF	205Ed	Alexander
1b	3	Brief Course in Hist. of Education.....	Jr., sr.	Psychol. 1-2
	9	TThS	205Ed	Alexander
101	3	Hist. Found. of Mod. Educ.	Jr., sr., grad.	Psychol. 1-2 and 6 cr. in Dept. of History
	11-12:30	TS	205Ed	Swift
102	3	History of Educ. since Reformation.....	Jr., sr., grad.	Psychol. 1-2 and 6 cr. in Dept. of History
(not offered 1918-19)				

No.	Credits	Title	Offered to	Prereq. courses
103	3	Educational Classics..... 10 TThS	Jr., sr., grad. 205Ed	1 or 101-102 Alexander
104	3	Educational Classics..... 10 TThS	Jr., sr., grad. 205Ed	1 or 101-102 Alexander
132	3	Foreign Schools..... Ar Ar	Sr., grad. Ar	1 or 101-102 and 3 Alexander
146	3	Hist. & Prin. of Religious Education..... 9 TThS	Jr., sr., grad. Ar	Psychol. 1-2 Swift
148	3	Hist. of Elementary and Secondary Education in the U.S..... 2 MWF	Jr., sr., grad. 205Ed	Psychol. 1-2 Alexander
201-202	4	Seminar in Selected Prob- lems in Educ. History... 4-5:30 T	Grad. 214Ed	1 or 101-102 and 3 Swift

1a,b. A BRIEF COURSE IN THE HISTORY OF EDUCATION. Current school problems and educational theories in the light of their history. Emphasis upon secondary education and those aspects of education of most immediate concern to high-school teachers. ALEXANDER.

101. FOUNDATIONS OF MODERN EDUCATION. Interpretative historical study of elements in modern education derived from Hebrews, Greeks, Romans, Middle Ages, and Renaissance. Emphasis upon secondary and higher education; origin and results of monopoly of cultural conception of education and cultural studies. SWIFT.
102. HISTORY OF EDUCATION FROM THE REFORMATION TO THE PRESENT TIME. Modern educational institutions, theories, and problems in the light of their history. Special emphasis upon elementary education. (Not offered 1918-19.) SWIFT.
103. EDUCATIONAL CLASSICS. An intensive study of selected writings of educational leaders; ancient, medieval, and renaissance. ALEXANDER.
104. EDUCATIONAL CLASSICS. An intensive study of selected writings of educational leaders, from Locke to the present time. ALEXANDER.
132. FOREIGN SCHOOLS. A survey and comparison of existing school systems in France, England, Germany, Denmark, and other European countries with emphasis on present problems. ALEXANDER.
146. HISTORY AND PRINCIPLES OF RELIGIOUS EDUCATION. Part I: Influence of religion and religious education as social and spiritual forces among certain selected types. Part II: Principles of education as applied to religious instruction and training. May be pursued as a graduate course under certain conditions. SWIFT.
148. HISTORY OF ELEMENTARY AND SECONDARY EDUCATION IN THE UNITED STATES. A study of the evolution of American educational institutions and practices from colonial times to the present. ALEXANDER.

201-202. HISTORY OF EDUCATION SEMINAR. Topic for the year 1918-19: History of Public School Support in the United States. In certain cases students will be allowed to devote themselves to other topics selected from an approved list. SWIFT.

### INDUSTRIAL EDUCATION

142	3	Industrial Education.....	Sr. grad.	1 or 101-102 and 3
	4	MWF	205 Ed	Rankin

142. INDUSTRIAL EDUCATION. Existing types of industrial and vocational schools and systems of training. Comparison of conditions in America and foreign countries. Organization of course of study. RANKIN.

### DEPARTMENT OF TRADE AND INDUSTRIAL EDUCATION

Professors WILLIAM H. KIRCHNER, ALBERT W. RANKIN; Assistant Professors HERMIONE L. DEALY, OLIVER C. EDWARDS, RUTH RAYMOND, MARVIN J. VAN WAGENEN; Instructors FRANCES MOREHOUSE, SAMUEL R. POWERS; Special Lecturers ELIZABETH M. FISH, GEORGE A. McGARVEY, E. M. PHILLIPS.

### GENERAL INFORMATION ORGANIZATION

The passage of the Smith-Hughes Bill in February 1917, provided that each state in submitting its plan to the Federal Board for Vocational Education should make provision for the training of vocational teachers in Agriculture, Trades and Industries, and Home Economics.

The State Board for Vocational Education designated the University of Minnesota as the training center for the preparation of teachers of Vocational Education, and during the last year, 1917-18, the University has offered courses in Vocational Agriculture, Vocational Home Economics and Trade Education. These courses have been offered in the regular sessions of the University, in the summer sessions, and in extension courses conducted at various centers.

The purpose of this bulletin is primarily to outline courses of study for the preparation of supervisors and teachers of trade and industrial subjects. For courses preparing teachers for conducting Vocational Agriculture and Home Economics classes, see the bulletin of the College of Agriculture.

### AGENCIES COÖPERATING WITH THE UNIVERSITY OF MINNESOTA

Within easy access to the University of Minnesota are various types of Trade and Industrial Schools; as, unit industrial day schools for boys and girls, corporation schools, evening, part-time, general continuation classes, and correspondence schools. These schools and other institutions and state and city departments listed below are coöperating with

the University in the preparation of trade teachers and in carrying on investigations in Vocational Education:

Bureau of Coöperative Research  
City Civic and Commerce Association  
Dunwoody Institute  
Extension Department of the University  
Federal School of Commercial Designing  
Girls' Vocational High School  
State Board for Vocational Education  
State Department of Labor

### OPPORTUNITIES FOR INVESTIGATION

The University has established two scholarships for advanced students in education who are qualified professionally and have the vocational training necessary to carry on investigations in the field of Vocational Education. These scholarships pay \$225 each. Any one interested may write to the Dean of the College of Education for particulars.

Graduate students in Education may choose as subjects of investigation in their seminar courses problems relating to Industrial Education; or they may take part in state and local surveys and investigations conducted by the University and the State Board of Vocational Education.

### TYPES OF THE INDUSTRIAL SCHOOL

1. Unit trade schools for boys and girls in cities over 25,000
2. General industrial school for boys and girls in cities less than 25,000
3. Part-time classes
  - a. Trade extension classes for boys or girls 14 years of age or over.
  - b. Trade preparatory classes for boys and girls 14 years of age or over.
  - c. General continuation classes for boys and girls between 14 and 18.
4. Evening trade classes for men and women.
5. Emergency war training classes for conscripted men.

### KINDS OF TRADE AND INDUSTRIAL TEACHERS NEEDED

1. Supervisors and teachers of industrial schools
2. Teachers of shop subjects
3. Teachers of related subjects
4. Teachers of non-vocational subjects
5. Teachers in general continuation classes
6. Instructors in evening classes

Supervisors and teachers of industrial schools: Schools and classes in industrial subjects are being established as fast as properly qualified teachers can be found. A four-year course is outlined under Courses of Study for Vocational Teachers. This course leads to the degree of

Bachelor of Science in Education and to a teacher's certificate in Vocational Education. In order that the industrial school may serve the ends for which it is organized, its teachers must have, besides the necessary trade experience, an understanding of educational theory and principles relating to industrial education and also a grasp of the industrial, economic, and social problems that have led up to the establishment of vocational education.

Teachers of shop subjects: Shop teachers must be masters of their trades; they must possess a fair technical knowledge; and, in addition, they must have the ability to deal with mature people as well as with boys and girls. The course for shop teachers is outlined under Course of Study.

Teachers of related subjects: Besides a two-year technical course, trade experience sufficient to make practical application of the subject-matter to the various trades is required of all teachers of related subjects. A course for related subject teachers is outlined under Courses of Study.

Teachers in general continuation classes: Teachers of these classes should possess the qualifications necessary for teaching in a Junior High School. In addition to this, the teacher should have some natural mechanical ability and an interest in things industrial. The course of study outlined for non-vocational teachers is required for teachers of general continuation classes.

Instructors in evening schools: The purpose of the evening industrial school is to give to the worker a further knowledge of his particular trade. The men and women conducting short-unit courses in evening classes must have a thorough knowledge of their particular trade and also the ability to impart this knowledge to others.

#### CERTIFICATION OF VOCATIONAL TEACHERS

The State Board for Vocational Education has the authority for granting certificates to properly qualified teachers. The conditions upon which these certificates are granted are based on (a) trade experience, (b) educational qualifications, and (c) fitness for teaching. The educational qualifications are listed under the various courses of study for the training of teachers.

Teachers of emergency war-training evening classes or short-unit courses will be selected and certified by the State Board for Vocational Education.

#### PLANS FOR TEACHER TRAINING

1. Professional courses at the regular session of the University of Minnesota:

The courses of study are outlined in this bulletin.

2. Summer Session courses: Courses covering six weeks' work outlined in the University summer session bulletin.

3. Correspondence courses: The extension department of the University of Minnesota offers several courses in vocational education through correspondence. Write to the Director of the University Extension for a bulletin of correspondence courses.

4. Extension courses at various centers in the state: During the year the University will establish training centers in the state wherever the demand for the courses justifies their establishment. Write to the College of Education or to the State Board of Vocational Education for a list of the training centers and the subjects offered.

5. Evening courses in Vocational Education will be offered in the cities where the demand for the courses warrants their establishment.

### COURSES OF STUDY

A four-year course leading to the degree of Bachelor of Science in Education with a major in Vocational Education for the preparation of directors, supervisors and teachers in trade and industrial schools is outlined below.

Requirements for graduation: (a) Completion of the following outlined course, (b) trade experience of at least one year beyond the apprenticeship period,—the trade experience to have been gained previous to taking up the work or to be acquired during the time of taking the course.

#### FIRST YEAR

Department	Number of Course	Title of Course	Credit
Rhetoric . . . . .	3 and 4	Composition and rhetoric	6
Mathematics . . . . .	71a and 72	Algebra, trigonometry and analytical geometry	10
Chemistry . . . . .	29 and 30	General Chemistry	6
Engineering . . . . .	1 and 2	Mechanical drawing and descriptive geometry	6
or			
Education . . . . .	33 and 34	Freehand drawing	6
Economics . . . . .	Ec. 2	Industries and commerce . . . . .	3
Total . . . . .			31

#### SECOND YEAR

Department	Number of Course	Title of Course	Credit
Mathematics . . . . .	73a and 74	Differential and integral calculus	10
or			
Mathematics . . . . .	90 and 92	Mechanics and strength of materials	8
Physics . . . . .	1 and 2	General physics	8
Engineering . . . . .	5 and 6	Graphics	4
or			
Engineering . . . . .	Arch. 43-44	Specifications and working drawings	6
Political Science . . . . .	1a	American Government	3
History . . . . .	5-6	American history	6
or			
Elective . . . . .			6
Total . . . . .			31

## THIRD YEAR

Department	Number of Course	Title of Course	Credit
* See note. Shop course depends on Trade Experience			
Education.....	1a	History of Education	
Engineering.....	21 or 22	Technical drawing	2
Education.....	V31a or V32b	Applied science	2
Education.....	V29a or 30b	Trade Mathematics	2
Education.....	3a or 3b	Social aspects of education	3
Education.....	V27a or V28b	Industrial history	2
Electives chosen from group (b) below.....			8
Total.....			30

## FOURTH YEAR

Department	Number of Course	Title of Course	Credit
*See note Shop course depends on Trade Experience			
Education.....	V25a or V26b	Organization and supervision of Vocational Education	8
Education.....	V37a or 38b	Practice teaching	2
Education.....	11b	Technique of Teaching	3
Education.....	V39a or V40b	Psychology of trade education	2
Electives chosen from group (b) below.....			13
Total.....			30

Department	Number of Course	Title of Course	Credit
Dunwoody Institute.....	Pr 2	Job Composition	2
Dunwoody Institute.....	Pr 11	Linotype (mechanism and operation)	3
Dunwoody Institute.....	Pr 15	Make ready on a cylinder press	1
Dunwoody Institute.....	Pr 16 and 17	Mixing colors and colorwork for pressmen	2
Education.....	Art. E. 31-32	Fundamental principles of design	6
Education.....	Art. E. 33-34	Freehand drawing and composition	6
Journalism.....	16	Copy reading	3
Federal School of Designing..		Half tone work and zinc etching	3
Commercial Plants.....		Methods of embossing and engraving	2
Commercial Plants.....		Bookbinding	2

\* Note: The shop courses should be selected from the same group in which the student has had his trade experience. Below are listed shop and technical courses for printers.

The shop work to be given at commercial plants can be arranged for on the half-day plan during the regular school year or the work can be taken up during the summer vacations. Some of the shop courses are given in evening classes as well as in day classes.

Arrangements have been made for offering shop courses to the following:

Machinist	Painter
Plumber	Sheet metal worker
Steam fitter	Cabinet maker
Carpenter	Pattern maker
Electrician	Interior decorator
Bricklayer	Power machine operator

Plasterer	Textile machine operator
Mechanical draftsman	Dressmaker
Architectural draftsman	Milliner
	Commercial designer

Group (b). The electives chosen during the junior and senior years will depend somewhat on the trade experience of the students and on the courses taken the first two years.

The students should consult their advisers before selecting electives. The following are suggestive electives.

Department	Number of Course	Title of Course	Credit
Education.....	142	Industrial Education	3
Education.....	105-106	Educational Psychology	6
Education.....	123-124	Supervision and Administration	6
Education.....	119	School Curricula	3
Education.....	MT 1	Advanced Drawing	2
Education.....	MT 6	Advanced Woodwork	2
Education.....	MT 11	Teaching and Supervision of Manual Training	3
History.....	155	American Economic and Social History	3
History.....	144	History of Minnesota	3
Rhetoric.....	11-12	Exposition, Description and Narration	6
Sociology.....	6	Social Reform Movements	3
Sociology.....	111-112	American People	6
Journalism.....	13-14	Reporting	6
Economics.....	161	Labor Problems	3
Engineering.....	21	Building Sanitation	2
Engineering.....	41	Elements of Structure	3

#### A SHORT COURSE OF STUDY OUTLINED FOR SHOP TEACHERS

Requirements: (a) A shop teacher shall possess at least an elementary education and exceptional skill in the subject to be taught. He shall have completed during the year 1918-19 six credits in Vocational Education chosen from the course outlined below.

Department	Number of Course	Title of Course	Credit
Education.....	V25a or V26b	Organization and Supervision of Vocational Education	2
Education.....	V37a or 38b	Practice Teaching	2
Education.....	V43b	Trade Teaching for Women	2
Education or.....	V29a or V30b	Trade Mathematics	2
Engineering or.....	21-22	Technical Drawing	2

#### A SHORT COURSE OF STUDY OUTLINED FOR TEACHERS OF RELATED SUBJECTS

Requirements: (a) A teacher of related subjects shall present evidence of the satisfactory completion of a four-year high school course and at least a two-year technical course in the subjects to be taught, or

in each case its equivalent. (b) He shall have had at least one year of shop experience and during the year 1918-19 shall have completed six or more credits in Vocational Education chosen from the courses outlined below.

Department	Number of Course	Title of Course	Credit
Education.....	V25a or V26b	Organization and Supervision of Vocational Education	2
Education.....	V43b	Trade Teaching for Women	2
Education or.....	V37a or V38b	Practice Teaching	2
Education or.....	V29a or V30b	Trade Mathematics	2
Education or.....	V31a or V32b	Applied Science	2
Education or.....	V39a or V40b	Psychology of Trade Education	2
Engineering.....	21a or 22b	Technical drawing	2

Certification: The State Board of Vocational Education will issue certificates to teachers of shop and related subjects when they have completed the above requirements.

For courses offered at other times and places see statement on evening and extension classes.

#### A SHORT COURSE OF STUDY OUTLINED FOR TEACHERS OF NON-VOCATIONAL SUBJECTS

Under non-vocational subjects are included history, general mathematics, English, general science, and civics. In the all-day and part-time vocational classes the teachers of these subjects will be the regular high school teachers of history, mathematics, English, and science. To do the teaching successfully the teachers must have at least a layman's knowledge of the machines used and the trades taught in the school. The following course is suggested for teachers of these subjects.

Department	Number of Course	Title of Course	Credit
Education.....	V43b	Trade teaching for Women and Girls	2
Education.....	V27a or V28b	Industrial History	2
Education.....	V29a or V30b	Trade Mathematics	2
Education.....	V31a or V32b	Applied Science	2
Education.....	V47a or V48b	Vocational Guidance	2

#### COURSES FOR EVENING CLASS TEACHERS

Teachers of evening classes are, in most instances, to be trained in service. Teachers will be examined and certified by the State Board for Vocational Education for the year 1918-19.

#### VOCATIONAL EDUCATION COURSES

For description of other courses mentioned in the outlined course of study see the bulletin of the department in which the subject is given.

No.	Credits	Title	Instructor
V25a or 26b	2	Organization and Supervision of Vocational Education 4-5:30	M Phillips, McGarvey
V27a or 28b	2	Industrial History 4-5:30	T Morehouse
V29a or 30b	2	Trade Mathematics 4-5:30	W Edwards
V31a or 32b	2	Applied Science 4-5:30	Th Powers
Eng 21 or 22	2	Technical Drawing 8-9	MWF Kirchner
35a or 36b	2	Drawing and Design for Printers 4-5:30	F Raymond
V37 or 38	2	Practice Teaching	
V39a or 40	2	Psychology of Trade Education 8-9	S Van Wagenen, Dealey
V41a or 42b	2	Seminar in Vocational Education 4-5:30	MW
V43b	2	Trade teaching in Vocational Schools for Women and Girls 3-4:30	F Fish
V45a 46		Shop Trade courses arranged.	
V47a or 48b	2	Vocational Guidance 3-4:30	W Ball

## DESCRIPTION OF COURSES

## V25a or 28b. ORGANIZATION AND SUPERVISION OF VOCATIONAL EDUCATION.

The course will include a careful study of the Smith-Hughes Act for Vocational Education. Particular attention will be given to the Minnesota plan for establishing vocational courses in our public schools. Consideration will be given to the various types of vocational schools, to adapting vocational courses to community needs, and to the methods of organization and supervision courses. The methods of making an analysis of certain trades will be discussed, and recent vocational surveys will be studied.

## V27a or 28b. INDUSTRIAL HISTORY.

A survey of the steps by which modern industries have been developed from their first forms in primitive times, with consideration of the social and economic effects of each change made. A study of the nature, significance, and results of labor under many conditions. The course closes with a brief review of labor history in Minnesota and a discussion of present day problems. MOREHOUSE.

## V29a or 30b. TRADE MATHEMATICS.

The course is planned to meet the needs of the teachers of the various trade subjects. The course includes practical arithmetic together with those principles of algebra, geometry, and trigonometry that find application in the shop. Part of the work will be individual in that it will relate to the mathematics of the trade which the teacher is preparing to teach. EDWARDS.

V31a or 32b. APPLIED SCIENCE. The applications of the principles of science to concrete and practical problems in the trades and industries. The course will consist of frequent trips to local industrial establishments, assigned readings, and special reports. Especial attention will be given to methods of teaching applied science. POWERS.

Eng. 21-22. TECHNICAL DRAWING. In this course emphasis will be placed on the study of the standard conventions in drawing as used by the different trades. Besides the regular drafting room work, outlines of drawing courses that relate to the various trades will be made. KIRCHNER.

V35a or 36b. DRAWING AND DESIGN FOR PRINTERS. The object of this course is to show the close relationship between art and printing. Simple design and composition will be studied and practical application made by sketching layouts of letter heads, title pages, panels, and cover designs. RAYMOND.

V37a or 38b. PRACTICE TEACHING. This course will provide the opportunity for the prospective teacher to teach under the supervision of a helpful critic. Arrangements will be made for the work to be carried out at the Girls' Vocational School and at Dunwoody Institute.

V39a or 40b. PSYCHOLOGY OF TRADE EDUCATION. Study of the formation of habits; individual differences, their nature, extent, and causes, and the part they play in acquisition of special trades. VAN WAGENEN, DEALEY.

V41a or 42b. SEMINAR—CURRENT PROBLEMS IN VOCATIONAL EDUCATION. Members of the class will be expected to make critical studies of various phases of Vocational Education. These studies may be in the form of an analysis of the working program for the vocational schools, outlining the course of study for certain subjects; or making a survey of a community or district for the purpose of suggesting a vocational program.

V43b. TRADE TEACHING FOR WOMEN AND GIRLS. The purpose of this course will be to give a survey of the principal positions open to women and girls in the professional, commercial, and industrial fields. This course will be of special value to those preparing to teach girls' vocational classes. FISH.

V45a or 46b. SHOP TRADE COURSES. Technical trade courses offered at Dunwoody Institute, at the University of Minnesota, and at certain commercial plants, for which University credit will be given. Consult the director of Vocational Education for a list of subjects and a statement of conditions under which these courses may be taken.

V47a or 48b. VOCATIONAL GUIDANCE.

## DEPARTMENT OF THEORY AND PRACTICE OF TEACHING

Assistant Professor WILFORD S. MILLER;\* Instructor WILLIAM D. REEVE. Professors GISLE BOTHNE, JOSEPH B. PIKE, CARL SCHLENKER, CHARLES P. SIGERFOOS, ANDREW A. STOMBERG; Associate Professor AUGUST C. KREY; Assistant Professors PAUL KLOPSTEG, CHESSLEY J. POSEY; Instructors JOSEPHINE DE BOER, ISAAC W. GEIGER, REWEY BELLE INGLIS, ARTHUR M. JOHNSON, ALBERT J. LOBB; Special Instructors THADDEUS P. GIDDINGS, GEORGINA LOMMEN, LYNNE E. STOCKWELL; Assistants RAYMOND N. CARR, AGNES FRYBERGER.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
Educ.				
11a	3	Technique of Teaching....	Jr., sr.	Psychol. 1-2
	8	MWF	205Ed	
	9	MWF	204Ed	
11b	3	Technique of Teaching....	Jr., sr.	Psychol. 1-2
	9	MWF	204Ed	
15a	3	Practice Teaching.....	Sr., grad.	See statement
	Ar	Ar	Ar	
15b	3	Practice Teaching.....	Sr., grad.	See statement
	Ar	Ar	Ar	
An. Biol.				
31-32	3†	Nature Study.....	Jr., sr.	12 cr. in An. Biol.
	2,3,4	T	213AB	Sigerfoos
Botany				
121a-121b	3	Methods.....	Jr., sr., grad.	12 cr. in Botany
	10	MWF	Ar	Johnson
Chemistry				
20	2	Teachers' Course.....	Jr., sr.	Chemistry
	8	TTh	Ar	3-4 or 7-8 or 21-22
English				
80a, b	3	Teachers' Course.....	Jr., sr.	See statement
	3-4:30	TTh	206Ed	Inglis
Geography				
55	3	Teachers' Course.....	Jr., sr., grad.	Any one of 36, 39, 116 or 118
	8	TThS	105P	Posey
German				
59-60	2†	Teachers' Course.....	Jr., sr.	German
	4	F	209F	29-30 and 31-32 or 53-54
History				
56-57	3	Teachers' Course.....	Jr., sr.	See statement
	4	MW	111L	Krey
Latin				
101	3	Advanced Caesar.....	Jr., sr.	Latin 58
	9	TThS	109F	Pike
Man. Tr.				
11a, b	3	Teaching and Supervision of Manual Training.....	Sr.	1-6
	3	MWF	114Ed	Stockwell
Mathematics				
54a, b	2	Teachers' Course.....	Jr., sr.	Math. 11
	4	TTh	115Ed	Reeve

\*Absent on leave.

† Both semesters must be completed before credit is given for first semester.

No.	Credits	Title		Offered to	Prereq. courses
Music					
27-28	6	Grade Methods.....		Jr., sr.	None
		4-5:30	WF	117Ed	Giddings
Physics					
90	2	Teachers' Course.....		Sr.	Physics 2 and 4, 8 and 10, or 2 yrs. Physics
		Ar	Ar	Ar	Klopsteg
Phys. Educ.					
Women					
15-16	6	Prin. of Phys. Educ.....		Sr.	Phys. Educ. 1-2, 3-4, 31- 32, 33-34.
		Lect. 9	TThS	201WGm	
		Lab. 1	MWF	3, 151, 153, WGm	Kissock, Schill, Tolg
Pol. Sci.					
56-57		Teachers' Course.....		Jr., sr.	See statement
		Ar	Ar	Ar	Lobb
Romance Lang.					
161-162	6	Teachers' Course.....		Jr., sr., grad.	See statement
		2-3:30	TTh	201F	deBoer
Norwegian					
110	2	Teachers' Course in Nor- wegian.....		Sr., grad.	Scand. 3-4
		4 and 5	Th	206F	Bothne
Swedish					
116	2	Teachers' Course in Swed- ish.....		Sr., grad.	Scand. 7-8
		Ar	Ar	206F	Stomberg

11a,b. TECHNIQUE OF TEACHING. Types of classroom exercises; preparation of teaching plans; hygiene of instruction; classroom management; the professional ethics of teaching; observation of high-school work. \_\_\_\_\_.

EDUCATION 15a,b. PRACTICE TEACHING. Teaching under supervision in the University High School and in the Minneapolis city schools, in the regular secondary school subjects. The course calls for one period daily at the school where the work is assigned. \_\_\_\_\_.

ANIMAL BIOLOGY 31-32. NATURE STUDY. Discussions, reference, field and laboratory work, through the year, once a week and, in addition, field trips Saturday afternoons during the autumn and spring months. Especially for the fitting of teachers in secondary schools. SIGERFOOS.

BOTANY 121a-121b. METHODS. Lectures, discussions, reading on principles and methods of teaching botany. Laboratory practice, field work, kind and use of material, study of various methods of presentation from the current text-books for elementary schools. Appreciation of fundamentals of the science from standpoint of teaching. JOHNSON.

CHEMISTRY 20. TEACHERS' COURSE IN CHEMISTRY. For those who expect to teach chemistry. GEIGER.

ENGLISH 80a,b. TEACHERS' COURSE IN ENGLISH. Methods of teaching English in high schools. Course of study, textbooks, and equipment; visits to high schools; theme correcting. Open to juniors, seniors, graduates qualifying for a certificate to teach English as a major subject. Credit only in Education. INGLIS.

GEOGRAPHY 55. TEACHERS' COURSE IN GEOGRAPHY. A critical study of materials and methods of teaching secondary school geography. The relation of human activities to environment will be emphasized. For teachers of high-school geography. Prerequisites: Geology 1 or 29, and 36 or 116 or 118. POSEY.

GERMAN 59-60. TEACHERS' COURSE IN GERMAN. Lectures, readings, and reports; observation of classes. SCHLENKER.

HISTORY 56-57. TEACHERS' COURSE IN HISTORY. Open only to students who have eighteen credits in History, including a starred course. Deals chiefly with the practical problems of teaching history and government in the secondary schools. Students planning to teach government must have nine credits in Political Science. KREY.

LATIN 101. ADVANCED COURSE IN CAESAR. TEACHERS' COURSE. Selections from books five to seven of the Gallic War; the principles of indirect discourse; intermediate Latin composition; class drill and discussion of various problems connected with secondary school work in Latin. PIKE.

MANUAL TRAINING 11a,b. TEACHING AND SUPERVISION OF MANUAL TRAINING. Teachers' course. The history and aims of industrial education and methods of presenting manual training and drawing to grade and high school pupils. Outlining of courses and the selecting of equipment adaptable to different types of school systems. STOCKWELL.

MATHEMATICS 54a,b. TEACHERS' COURSE IN MATHEMATICS. Text and assigned readings. Special attention paid to the fundamental principles of algebra and geometry. REEVE.

MUSIC 27-28. PUBLIC SCHOOL MUSIC. Grade methods.

PHYSICS 90. TEACHERS' COURSE IN PHYSICS. Methods of presentation; selection of lecture and laboratory experiments; laboratory management. KLOPSTEG.

PHYS. EDUCATION FOR WOMEN 15-16. THEORY OF PHYSICAL EDUCATION.

POLITICAL SCIENCE 56-57. TEACHERS' COURSE. Lectures on teaching government in the secondary schools, given in coöperation with the Department of History and credited as part of History 56-57. LOBB.

ROMANCE LANGUAGES 161-162. TEACHERS' COURSE. Lectures and discussions on methods, textbooks, etc. DE BOER.

SCANDINAVIAN 110. TEACHERS' COURSE IN NORWEGIAN. For students who expect to teach Norwegian in the high schools. BOTHNE.

SCANDINAVIAN 116. TEACHERS' COURSE IN SWEDISH. For students who expect to teach Swedish in the high schools. STOMBERG.

### DEPARTMENT OF AGRICULTURAL EDUCATION

Professors ASHLEY V. STORM, DEXTER D. MAYNE, \_\_\_\_\_; Assistant Professors BUEFORD M. GILE, ALBERT M. FIELD; Instructors JOHN V. ANKENY, PERCY B. BARKER, WILLIAM P. DYER; Extension Specialists THEODORE A. ERICKSON, GEORGE F. HOWARD.

*General statement.*—For specialization in this department, see special requirements in course of study.

### COURSE IN AGRICULTURAL EDUCATION

#### *Freshman Year*

All students must register for group A and enough additional work from group B to make a total of not more than 18 and not less than 15 credit hours each semester. All courses in group B, except such options as are indicated, not completed in the freshman year must be registered for in the sophomore year.

#### GROUP A

##### *First Semester*

Bot. 1a, General Botany, 3  
or An. Biol. 3, General Zool., 3  
\*Rhet. 1a, Rhetoric, 3  
Phys. Educ. 1, Personal Hygiene  
Military Drill  
†Freshman Lectures

##### *Second Semester*

Bot. 2b, General Botany, 3  
or An. Biol. 4, General Zool., 3  
Rhet. 2b, Rhetoric, 3  
Chem. 4b, General Chemistry and Qualitative Analysis, 3  
Military Drill

#### GROUP B

Agron. 7, Farm Practices. A no-credit course required of those entering with insufficient farm practice.  
Agr. Eng. 11a, b, Applied Mathematics. Required of those who do not present higher algebra for admission.  
Agr. Eng. 13a, b, Farm Motors, 3  
Chem. 3a, b, Advanced General Chemistry and Qualitative Analysis, 3 or Chem. 33, General Chemistry and Qualitative Analysis, 5. The five-credit course is offered the first semester only and must be taken by those who do not present a unit of chemistry for admission. Students may be required to change from 3 to 33 at any time during the course. Those presenting a unit of high-school chemistry can obtain not more than three credits for the completion of Course 33.  
Econ. 2a, b, Industries and Commerce of U. S., 3  
An. Husb. 1a, b, Types and Breeds of Livestock, 3.  
Dy. Husb. 7a, b, Elements of Dairy Husbandry, 3.  
Agron. 1a, b, Farm Crops I, 3.

\* Special attention is called to rules on delayed credit and for students with insufficient preparation on page 21, Bulletin of the College of Agriculture, Forestry, and Home Economics.

† A course of lectures intended primarily to familiarize the new student with the college, college customs and methods of procedure is required of all freshmen.

*Sophomore Year*

Students desiring to procure a state professional certificate should consult the Chief of the Division of Agricultural Education before registering for the work of the sophomore year.

Those specializing in this course will be required to take Phys. 5-6, General Physics, 6 credits, except when they present high-school physics for admission or complete the equivalent of high-school or college physics prior to registration for the work of the sophomore year.

*First Semester*

Econ. 3a, Principles of Economics, 3  
 Rhetoric 11a, Argumentation, 3  
 An. Biol. 3, General Zoology, 3  
 Path. 6a, Elementary Bacteriology, 3  
 An. Husb., 3, Market Classes, 3  
 Agr. Educ. 21, Industrial Educ., 3  
 Educ. 5a, The American School, 3  
 Military Drill

*Second Semester*

Pol. Sci. 1b, American Govern., 3  
 Rhet. 22b, Public Speaking, 3  
 An. Biol. 4, General Zoology, 3  
 Agr. Educ. 11b, Principles of Industrial Education, 3  
 Agr. Biochem. 4, Plant and Animal Life, 3  
 Agr. Eng. 3b, Mechanical Draw., 3  
 Military Drill

*Junior Year*

By permission of the head of the department a limited number may take Agr. Educ. 131b, Methods, in the second semester of the junior year, to prepare for Course 141a, Teaching, first semester, senior year. Those who do will postpone some three-credit course until the second semester, senior year.

*First Semester*

Econ. Zool. 3, Economic Entomology, 3  
 Pl. Path. and Bot. 1, Plant Pathology, 3  
 Soils, 3, Soil Physics and Manag., 3  
 Agron. 5, Farm Crops II, 3  
 An. Nutr. 1, Prin. of Nutrition, 3  
 An. Husb. 11, Elements of Feeding, 3

*Second Semester*

Agron. 104, Grain and Corn Judging, 3  
 Vet. Sci. 6, Veterinary Medicine, 3  
 Soils 4, Soil Fertility, 3  
 An. Husb. 4, Livestock Judging, 1½  
 Dy. Husb. 4, Dairy Stock Judging, 1½  
 Agr. Educ. 68 and Hort. 94, Home and School Gardening, 3  
 Agron. 3b, Farm Machinery, 3

*Senior Year*

Agr. Educ. 141a, Teaching, is offered the first semester for as many of those who have completed Agr. Educ. 131, Methods, as can be accommodated.

Agr. Educ. 151a,b, Organization and Management, may be taken either semester.

*First Semester*

Agr. Eng. 7, Farm Structures, 3  
 P. Husb. 1, Poultry, 3  
 Pl. Path. and Bot. 9, Weeds and Seed Testing, 3  
 Agr. Educ. 151a, Organization and Management, 3  
 Agr. Educ. 131a, Methods, 3  
 Elective, 3  
 Public Health Lectures

*Second Semester*

Agron. 102b, Farm Management II, 3  
 Econ. Zool. 16 and Pl. Path. and Bot. 6, Plant Pest Control, 3  
 Agr. Educ. 141b, Teaching, 3  
 Electives, 9

## COURSES

*Introductory Courses*

No.	Credits	Title	Offered to	Prereq. courses
11a, b	3	Principles of Vocational Education.....	†Soph., jr., sr.	None
21	3	Vocational Education.....	†Soph., jr., sr.	None
41a, b	3	Teaching.....	†Sr.	131, Agron. 5, 104 See course descrip.
63	3	General Agriculture.....	All	None
64	3	General Agriculture.....	All	None
68	3	Home and School Gardening .....	†Jr., sr.	None
81	3	Agricultural Statistics and Graphic Representation .	Soph., jr., sr.	None
<i>Advanced Courses</i>				
131a, b	3	Methods in Teaching High School Agriculture.....	†Sr.	11
151a, b	3	Organization and Manage.	†Sr.	68
161	3	Fundamentals of Agric....	†Jr., sr.	None
162	3	Fundamentals of Agric....	†Jr., sr.	None
171a, b	3	Extension Work.....	†Sr.	None
173	3	History of Agriculture .....	†Soph., jr., sr.	None
175a, b	3	Visual Presentation.....	†Jr., sr.	None
191-2	2-4	Seminar.....	Sr., grad.	

† Offered only to those preparing to teach.

## INTRODUCTORY COURSES

11a,b. PRINCIPLES OF VOCATIONAL EDUCATION. The fundamental principles upon which education is based. Emphasis is placed on those phases which are most closely related to industrial education. DYER, GILE.

21. VOCATIONAL EDUCATION. A short history of vocational education; the present status in Europe and United States; manual training and home arts in an educational system; place of agriculture in the public schools with special reference to Minnesota. MAYNE.

41a,b. TEACHING. Observation of regular classes; interpretation of class practices; preparation of lesson plans and actual teaching of classes under careful supervision in recitation and laboratory; criticism and discussion of plans, methods, and results of student's teaching. Students are admitted to this course only when recommended by the Faculty of the division in which they are specializing and when accepted by the Division of Agricultural Education. STORM, GILE, FIELD, ANKENY, BARKER.

63. GENERAL AGRICULTURE. For students specializing in such divisions as Agricultural Biochemistry, Economic Zoology, Plant Pathology, and in other colleges. A series of units by division chiefs and other agricultural specialists. STORM, MAYNE, BARKER.

64. GENERAL AGRICULTURE. Continuation of Course 63. Credit is given for either course separately but there is no duplication of subject

matter and both should be taken to obtain a general knowledge of agriculture. STORM, MAYNE, ANKENY.

68. HOME AND SCHOOL GARDENING. Lectures and laboratory. The elements of horticulture as applied to high-school instruction, plant propagation, fruit growing, home gardening, school gardening, and the planning of home and school grounds. Same as Hort. 94. FIELD, BRIERLEY.

#### ADVANCED COURSES

131a,b. METHODS IN TEACHING HIGH-SCHOOL AGRICULTURE. Fundamental elements of method in teaching as related to teaching agriculture in high school. Organizing subject matter of daily work; selection and manipulation of devices. Classroom and laboratory method. Specific plans for teaching secondary agriculture. FIELD.

151a,b. ORGANIZATION AND MANAGEMENT. Organization and management of work in secondary schools, particularly in Minnesota, with special reference to agricultural work, courses of study, programs, equipment, laboratory and class management, extension work, plots, and coördination of work. STORM, DYER.

161. FUNDAMENTALS OF AGRICULTURE. Essential for principals and superintendents of schools in which agriculture is taught, and valuable for students of other colleges whose time for agriculture is limited. Agricultural college experts will give work in their special fields. STORM, BARKER.

162. FUNDAMENTALS OF AGRICULTURE. Continuation of Course 161. Credit is given for either course separately, but there is no duplication of subject matter and both should be taken to obtain a fundamental knowledge of agriculture. STORM, GILE.

171a,b. EXTENSION WORK. Federal, state, and local extension aims, organization. Assembling and use of extension data and equipment. Development of extension methods especially as applied to the work in Minnesota. STORM, GILE, BARKER.

173. HISTORY OF AGRICULTURE. A history of agricultural progress with special reference to the greater movement and to sources from which modern agriculture has received its most valuable acquisitions.

175a,b. VISUAL PRESENTATION. Designed to prepare persons for presenting materials by means of slides, films, charts, etc. Students assisted in assembling materials for their own use and in acquiring skill and technique in preparation and operation of various mediums. FIELD.

181. AGRICULTURAL STATISTICS AND GRAPHIC REPRESENTATION. Course teaches application of statistical methods to agriculture and different means of representing agricultural statistics graphically. Of value to all students to enable them to interpret, present, and use agricultural statistics and graphic representation. BARKER.

191-2. SEMINAR FOR GRADUATE STUDENTS AND SENIORS SPECIALIZING IN AGRICULTURAL EDUCATION. Critical studies of important problems in agricultural education; opportunity for individual investigation and research; review and interpretation of current educational literature. Weekly meetings throughout year. STORM, FIELD.

### DEPARTMENT OF HOME ECONOMICS EDUCATION

Professor JOSEPHINE T. BERRY; Associate Professor MILDRED WEIGLEY; Assistant Professors SYLVIA CAMPICLIA, MARION WELLER.

No.	Credits	Title	Offered to	Prereq. courses
HE42	3	Home Economics Education..... 8:55-9:40 MWF	Jr. 213He	HE 22, Psychol. 5b Berry, Weigley
HE44	3	Organ. and Methods of Teaching for Textiles and Clothing..... 8:55-9:40 MWF	Jr. 213He	HE13, Psychol. 5b Berry, Weller
HE45	1	Home Economics Education..... 8:55-9:40 S	Sr. 213He	HE42 Berry
HE46	1	Home Economics Education..... 8:55-9:40 S	Sr. 213He	HE45 .....
HE47	3	Observation and Teaching. 8:00-8:45 TThS	Sr. 213He	HE42 Weigley
HE48	3	Observation and Teaching. 8:00-8:45 TThS	Sr. 309He	HE42 Campiglia

HE42. HOME ECONOMICS EDUCATION. Curricula, textbooks, equipment, methods of teaching, and class management, as applied to the teaching of home economics. BERRY.

HE44. ORGANIZATION AND METHODS OF TEACHING FOR TEXTILES AND CLOTHING. A combination with Course HE42, dealing with adaptations to the teaching of textiles and clothing. BERRY, WELLER.

HE45. HOME ECONOMICS EDUCATION. A continuation of HE42. BERRY.

HE46. HOME ECONOMICS EDUCATION. A continuation of HE45. BERRY.

HE47. OBSERVATION AND TEACHING. Observation of teaching in regular classes; criticism and discussion of class practice, lesson plans, methods, results, and examinations; preparation of lesson plans, and directed teaching of foods and cookery and home management. WEIGLEY.

HE48. OBSERVATION AND TEACHING. A course similar to Course HE47 but dealing with the teaching of textiles and clothing. CAMPICLIA.

HE49. OBSERVATION AND TEACHING. A combination of Courses HE47 and HE48.

### SPECIAL CURRICULA TEACHERS OF DEFECTIVES

In coöperation with the State Department of Education, the College of Education has outlined a four years' course for the training of teach-

ers of special children in Minnesota schools. According to the tentative program so far outlined it will be possible for students to pursue this course and at the same time to secure the Bachelor's degree at this University. It is further intended that a number of the courses from this four-year program will be offered in the summer.

Students who have had two years' teaching experience in the public schools and who carry a group of these courses satisfactorily during the current year will be given a provisional certificate by the State Department, enabling them to qualify for teaching in special classes.

#### OUTLINE OF COURSE

##### FRESHMAN YEAR

Department	Number of Course	Title of Course	Credits
Rhetoric.....	1-2	Elementary.....	6
Animal Biology or Chemistry.....	1-2	Elementary.....	6
Modern language.....			6 or 12
Electives.....			6 or 12
<b>Total.....</b>			<b>30</b>

##### SOPHOMORE YEAR

Department	Number of Course	Title of Course	Credits
Psychology.....	1-2	Elementary.....	6
Sociology.....	1a or 1b	Introductory.....	3
Sociology.....	6	Social Reform Movements.....	3
Physiology.....	3a or 3b	Elementary.....	3
Mech. Engineering.....	8	Industrial Education including Sloyd and Woodwork.....	3
Physical Education.....	31 or 32	Organization of Games and Folk Dancing.....	0
Animal Biology or Chemistry.....	1-2	Elementary.....	6
Electives.....			6
<b>Total.....</b>			<b>30</b>

##### JUNIOR YEAR

Department	Number of Course	Title of Course	Credits
Psychology.....	101	Experimental.....	3
Sociology.....	51	Treatment of Dependents and Defectives.....	3
Sociology.....	52	Child Welfare.....	3
Sociology.....	53	Treatment of Delinquents.....	3
Education.....	1a or 1b or 5	History of Education or Course in American School System.....	3
Education.....	11a or 11b	Technique of Teaching.....	3
Education.....	3a or 3b	Social Aspects.....	3
Education.....	135	Mental Tests.....	3
Education.....	105	Educational Psychology.....	3
Education.....	140	Course of Study for Subnormal Children.....	3
<b>Total.....</b>			<b>30</b>

## SENIOR YEAR

Department	Number of Course	Title of Course	Credits
Education.....	109	Educational Diagnosis.....	2
Education.....	134	Mental Diagnosis of School Children.....	2
Education.....	137, 138	Psycho-educational Clinic.....	3
Education.....		Practice Teaching of Subnormal Children.....	3
Education.....	123	Theory of Supervision.....	3
Education.....	106	Educational Psychology.....	3
Education.....		Study of Speech Defects.....	3
Education.....		Lectures on Organization and Administration of Classes for Subnormal Children	
Human Physiology.....	137a or b	Foods and Practical Dietetics.....	2
Electives.....			9
Total.....			32

## TRAINING COURSE FOR HOME VISITORS AND VOCATIONAL ADVISERS

This course is intended to train teachers and social workers to act as interpreters between home and school. The course consists of both academic and field work. A special certificate will be given to those who complete the four-year course covered below. Variation from this course can be made only upon petition. A fifth year is outlined for graduate students who wish to do research in this field.

The closest coöperation will exist between the College of Education and the Department of Attendance and Vocational Guidance in the public schools of Minneapolis, in which all candidates for a certificate will be expected to do a certain amount of field work. This field work will involve a study of the attendance department, census checks, follow-up plans, special case work, work history cards, employment certificate reports, absentee reports, home visiting and the observation of the work of the life career classes of the public schools.

## COURSE OF STUDY

## FIRST YEAR

*Required*

Rhetoric, science, and history to meet the requirements of the Arts College.

*Advised Electives*

Courses open to freshmen in Languages, history, science or mathematics.

## SECOND YEAR

Courses open to sophomores which are required for a teachers' certificate in the chosen subject

General Psychology

General Economics

General Introduction to Sociology

Industries and Commerce of the United States.

American Municipal Administration.

State and Local Government

Social Reform Movements

Public Speaking

Philosophy, including Ethics.

## THIRD YEAR

*Required*

Courses necessary to carry on work leading to a teachers' certificate in the chosen subject, and the prescribed work in education which include:

- History of Education
- Technique of Teaching
- Social Aspects of Education
- Statistics
- Mental Tests
- Treatment of Defectives and Dependents.

Treatment of Delinquents

*Advised Electives*

- Child Welfare
- Trade Unionism and Allied Problems

## FOURTH YEAR

Courses necessary to carry on work leading to a Teachers' Diploma in the chosen subject. Also the required practice teaching; this practice teaching will include work with a High School Life Career Class.

- Industrial Education
- Technique of Family Treatment
- Social Statistics and Social Surveys
- Labor Problems
- School Curricula
- The Theory and Practice of Vocational Guidance

- School Organization and Administration.
- Educational Diagnosis Foreign Schools
- Occupations open to women

## GRADUATE YEAR

- Methods in Educational Research
- Seminar in Social and Industrial Investigation
- Wages
- Vocational Guidance

- Psycho-educational Clinic
- Educational Administration
- Charitable Administration
- Finance and Publicity
- Mental Diagnosis of School Children
- Seminar in Educational Psychology

## MANUAL TRAINING

Special Instructor LYNNE E. STOCKWELL.

*For a teacher's certificate*, completion of eighteen credits in the courses listed below, and the educational work outlined under courses of study for University teacher's certificate.

Students desiring to procure a special certificate for the teaching of manual training should consult with the instructor in Manual Training before registering.

## COURSES

No. Credits	Title	Offered to	Prereq. courses
1 3	Mechanical Drawing..... Ar Ar	Soph., jr. Ar	None French
3a,b* 3	Mechanical Drawing..... Ar Ar	Soph., jr. Ar	None Tyler

No.	Credits	Title	Offered to	Prereq. courses
3†	2	Descriptive Geometry..... Ar Ar	Jr. Mech. Eng.	None Kirchner
43‡	3	Working Draw. and Specifi- cation..... Ar Ar	Jr., sr. ME	Mech. Draw. Cederberg
1	2	Adv. Drawing..... 4-6 WF	Jr., sr. 114Ed	Mech. Draw.
5*	3	Carpentry..... Ar Ar	Jr., sr. Agr. Eng.	White
7*	3	Farm Structures..... Ar Ar	Jr., sr. Agr. Eng.	5 Tyler
7	2	Wood Turning and Pattern Making..... Ar Ar	Sr. ME	1-5 Richards
8	2	Foundry Work..... Ar Ar	Sr. ME	1-5, 7
9	2	Forge..... Ar Ar	Sr. ME	1-5 Hobart
10	2	Machine Shop..... Ar Ar	Sr. ME	1-5 Shipley
6	2	Advanced Woodwork..... 4-6 MWF	Jr., sr. 114Ed	Agr. Eng. 5 Stockwell
11 MT	3	Teaching and Supervision of Manual Training..... 3 MWF	Sr. 114Ed	1-6 Stockwell

NOTES: 1. In all manual training courses each credit hour calls for at least three hours of shop work.

2. In all drawing courses students provide their own instruments and materials. A laboratory fee of three dollars per course will be charged for shop courses.

\* Agricultural Engineering

† Engineering

‡ Architecture

MECHANICAL DRAWING. Note: For a description of this course see Bulletin of the College of Engineering and Architecture. FRENCH.

AGRICULTURAL ENGINEERING 3a,b. Note: For a description of this course see Bulletin of the College of Agriculture, Forestry, and Home Economics. TYLER.

DESCRIPTIVE GEOMETRY. Note: Course offered in the Engineering College, No. 31. KIRCHNER.

ARCHITECTURE 43. WORKING DRAWINGS AND SPECIFICATIONS. Note: See Bulletin of the College of Engineering and Architecture for description of this course. CEDERBERG.

ADVANCED DRAWING. Orthographic and isometric projection, lettering, drawing from machine models, cabinet drawing, topographical drawing, shop details, and elements of architectural drawing.

AGRICULTURAL ENGINEERING 5. CARPENTRY. Note: For description of this course see Bulletin of College of Agriculture, Forestry, and Home Economics. WHITE.

AGRICULTURAL ENGINEERING 7. FARM STRUCTURE. Note: For description of this course see Bulletin of College of Agriculture, Forestry, and Home Economics. TYLER.

7. WOOD TURNING AND PATTERN MAKING. RICHARDS.
8. FOUNDRY WORK.
9. FORGE. HOBART.
10. MACHINE SHOP. SHIPLEY.

For description of above courses see Bulletin of College of Engineering and Architecture.

6. ADVANCED WOOD WORK. Work adapted to upper grammar grades and high school, with the emphasis placed upon the preparation of models suitable for these grades. Student demonstrations of simple projects. Shop fee, \$3. STOCKWELL.

MT11a,b. THE TEACHING AND SUPERVISION OF MANUAL TRAINING. Teachers' course. History and aims of industrial education and methods of presenting manual training and drawing to grade and high-school pupils. Outlining of courses and selecting of equipment adaptable to different types of school systems. STOCKWELL.

### PUBLIC SCHOOL MUSIC

Instructor THADDEUS P. GIDDINGS; Assistants RAYMOND CARR, MRS. AGNES FRYBERGER.

Certificate in Public School Music open to students in the College of Education.

Prerequisite six hours in Psychology, Professor Woodrow's three-credit course in General Psychology and Mr. Erikson's three credit course in Acoustics may be substituted for the six hours in Psychology.

#### JUNIOR YEAR

No. Credits	Title	Offered to	Prereq. courses
1-2 6	*Harmony.....	Jr., sr.	None
27-28 6	*Grade Methods, Theory and Practice.....	Jr., sr.	None
Educ. 3a 3	#Social Aspects of Education.....	Jr., sr.	Psychol. 1-2

#### SENIOR YEAR

21-22 4	*Voice .....	Jr., sr.	None
29-30 6	*Normal Piano.....	Jr., sr.	None
39 3	*High School Methods....	Sr.	1-2, 27-28
40 3	*Orchestra, Theory, Practice, Appreciation.....	Sr.	39

\* For description of these courses see Bulletin of College, Science, Literature, and the Arts, pages 109 to 112.

# For description of these courses see pages 29 and 44 of this bulletin.

No.	Credits	Title	Offered to	Prereq. courses
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11	3	#Technique of Teaching...	Jr., sr.	Psychol. 1-2
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# For description of these courses see pages 29, 44 of this bulletin.

Students preparing for a teacher's certificate in public school music normally should choose their electives in the following fields: Public Speaking, Art Education, Physical Education, Social and Civic Work.

### TEACHERS OF PHYSICAL EDUCATION

Seniors desiring special teachers' certificates in Physical Education will be expected to complete the courses listed below.

No.	Title	Credits
1-2	Elementary Physical Training.....	0
3-4	Intermediate Physical Training.....	3
43, 44	Elementary Swimming.....	0
5-6	Advanced Physical Training (must be taken in senior year). . . . .	3
13	Personal Hygiene.....	3
15-16	Theory of Physical Education.....	6
31-32	Organized Games and Folk Dancing.....	0
33-34	Major Sports.....	0
15a or b	Practice Teaching.....	3
3a	Social Education.....	3
11a	Technique of Teaching.....	3
1 or 101-102	History of Education.....	3
141	School Sanitation and Public Health.....	3

### HIGH-SCHOOL RURAL TRAINING

Special Instructor GEORGINA LOMMEN.

#### REQUIREMENTS OF THE DEPARTMENT

1. *For admission.* (1) Two years of rural teaching experience; (2) Advanced diploma from a state normal school. For exceptions, see statement, page 23.

2. *For recommendation for state endorsement.* For explanation, see page 24 of this bulletin.

Students who complete the following course will be eligible for recommendation for the endorsement of the State Department of Education as teachers of high-school rural-training departments.

In the following course, Education is selected as a major. The two minors recommended are English and Economics. The Education courses, in *italics* are all required, but previous training, experience, and needs of the student may modify his choice of minors and of other electives. Normal school graduates are credited with the History of Education and Introductory Psychology, consequently these courses are not included in the following outline. (See also page 11.)

PRESCRIBED COURSE FOR HIGH-SCHOOL RURAL-TRAINING TEACHERS  
JUNIOR YEAR

## First Semester

Credit

Education:	
3a. <i>Social Aspects of Educ.</i> .....	3
Economics:	
3. <i>General Economics</i> .....	3
English:	
1. <i>General Survey</i> .....	3

## Second Semester

Credit

Education:	
152. <i>Elem. Meth. in Read.</i> .....	1
154. <i>Elem. Meth. in Ind. Arts.</i> ..	1
156. <i>Elem. Meth. in Geog.</i> .....	1
Economics:	
4. <i>General Economics</i> .....	3
English:	
2. <i>General Survey</i> .....	3
Home Economics*†.....	3

## SENIOR YEAR

## First Semester

Credit

Education:	
11a. <i>Technique of Teaching</i> ...	3
123. <i>School Supervision</i> .....	3
153. <i>Elem. Meth. in English</i> ...	1
155. <i>Elem. Meth. in History</i> ...	1
157. <i>Elem. Meth. in Arith</i> .....	1
Sociology:	
119. <i>The Family</i> .....	3
Agriculture*.....	3

## Second Semester

Credit

Education:	
142. <i>Industrial Education</i> .....	3
15. <i>Practice Teaching</i> .....	3
Sociology:	
6. <i>Social Reform Movements</i> ..	3
52. <i>Child Welfare</i> .....	3
120. <i>Special Progress</i> .....	3
Psychology:	
106. <i>Mental Retardation</i> .....	3

\* Courses to be selected according to individual interests after conferences with head of department.

† A course in Home Economics especially designed for teachers of high-school training departments will be arranged in case the number of registrations and the community of needs of students warrant this.

Descriptions of all courses above not definitely referred to in footnotes will be found in the proper departmental statement.

## HIGH-SCHOOL TRAINING DEPARTMENTS METHODS

No. Credits	Title	Open to	Prereq. courses
152 1	<i>Elem. Meth. in Reading</i> ..... 5 Th	Jr., sr., grad. 111Ed	1 or 101-1-2 Lommen
153 1	<i>Elem. Meth. in English</i> ..... 5 Th	Jr., sr., grad. 111Ed	1 or 101-102
154 1	<i>Elem. Meth. in Indus. Arts</i> ..... Ar Ar	Jr., sr., grad. Ar	1 or 101-102 Lommen
155 1	<i>Elem. Meth. in History</i> ..... 5 T	Jr., sr., grad. 111Ed	1 or 101-102 Lommen
156 1	<i>Elem. Meth. in Geog</i> ..... 5 T	Jr., sr., grad. 111Ed	1 or 101-102 Lommen
157 1	<i>Elem. Meth. in Arithmetic</i> ..... Ar Ar	Jr., sr., grad. Ar	1 or 101-102 .....

## COURSES

152. ELEMENTARY METHODS IN READING. The place of reading in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural community. LOMMEN.

153. ELEMENTARY METHODS IN ENGLISH. The place of English in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural community.

154. ELEMENTARY METHODS IN INDUSTRIAL ARTS. The place of industrial arts in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural community. LOMMEN.

155. ELEMENTARY METHODS IN HISTORY. The place of history in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural community. LOMMEN.

156. ELEMENTARY METHODS IN GEOGRAPHY. The place of geography in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural communities. LOMMEN.

157. ELEMENTARY METHODS IN ARITHMETIC. The place of arithmetic in the rural school curriculum. Different types of lessons, equipment, materials, adaptation to needs of rural communities.

### ANIMAL BIOLOGY

Professors HENRY F. NACHTRIEB, HAL DOWNEY, JOHN B. JOHNSTON, WILLIAM A. RILEY, THOMAS S. ROBERTS, CHARLES P. SIGERFOOS; Assistant Professors ROYAL N. CHAPMAN, ELMER J. LUND, OSCAR W. OESTLUND; Instructors GEORGE DELWIN ALLEN, CHARLES E. JOHNSON.

#### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits.

*For a major*, twenty-four credits.

*For B.A. with Honors*, freshman year, Course 1-2; sophomore year, the student may elect from Courses 7-8, 15-16, 19-20, 23-24; during the junior year the student must elect from Courses 31-144, and must include some line of work begun in the sophomore year which he expects to pursue during the senior year under 161-162.

*For a teachers' certificate*, an average of one and one-half honor points in Courses 1-2, 31-32 and six other credits in Animal Biology. One year of Botany is advised.

#### JOURNAL CLUB

The professors, instructors, and advanced students of the department meet once a week to review and discuss current zoological literature and to listen to reports from those carrying on investigations.

#### COURSES

No. Credits	Title	Offered to	Prereq. courses
1-2 6*	General Zoology.....	All	None
	Sec. 1. Lab. 8, 9 Lect. 10	WF WF	101AB 313AB

No.	Credits	Title	Offered to	Prereq. courses
		Sec. 2. Lab. 10, 11 Lect. 9	WF WF	101AB 313AB
		Sec. 3. Lab. 1, 2 Lect. 1	M WF	101AB 313AB
		Lab. 2, 3	W	101AB
		Sec. 4. Lab. 8, 9 Lect. 10	ThS ThS	101AB 313AB
		Sec. 5. Lab. 10, 11 Lect. 9	ThS ThS	101AB 313AB
		Extra Lab. Classes		
		Sec. 6. Lab. 8, 9	MT	101AB
		Sec. 7. Lab. 10, 11	MT	101AB
7-8	6*	Histology-Embryology 10, 11	Soph., jr., sr. 201, 211AB	1-2 Downey
12	3	Histological Technique..... See Anatomy Schedule.	Soph., jr., sr.	1-2 and 7-8
15-16	6*	General Physiology.....	Soph., jr., sr.	An. Biol. 1-2, and 6 other credits in either An. Biol. or Botany or Chem. or Physics.
19-20	6*	Comp. Gross Anat. of Vert..... 2, 3	MWF 20AB	Lund Soph., jr., sr. 1-2
		2, 3	MWF 105-109, 211AB	Johnson
23-24	6*	Entomology..... 10, 11	Soph., jr., sr. 208-210AB	1-2 Oestlund
		8, 9	TThS 208-210AB	Oestlund
28	3	Ornithology..... TTh	Soph., jr., sr. 211, 314AB	1-2 Roberts
30	3	Neurology..... Ar	Soph., jr., sr. 215IA	1-2 Johnston
31-32	3*	Nature Study..... T	Jr., sr. 213AB	12 cr. in An. Biol. Sigerfoos
		2, 3	MWF 208-210AB	Sigerfoos
35	3	Animal Parasites..... 2, 3	Soph., jr., sr. 208-210AB	1-2 Riley
36	3	Rel. of Insects to Diseases..... 2, 3	Soph., jr., sr. 208-210AB	23-24 and 35 Riley
51	3‡	Protozoology..... 8, 9	Jr., sr. 213AB	9 cr. incl. 1-2 Sigerfoos
56	3‡	Morphology of Invertebrates..... 8, 9	Jr., sr. 213AB	9 cr. incl. 1-2 Sigerfoos
101-102	6	Advanced General Entomology..... 2, 3	Jr., sr., grad. 208-210AB	1-2, 23-24 Oestlund, Chapman
103	3	Biol. and Taxon. Aphididae..... 8, 9	Jr., sr., grad. 208	1-2, 23-24 Oestlund
105-106	6*	Hist. and Develop. Insects..... Hours, etc.	Jr., sr., grad. Ar	1-2, 23-24 206-211AB
107-108	6	Gen. Ecology of Insects..... 2, 3, 4	Jr., sr., grad. TTh	1-2, 23-24 208-210AB
117-118	6	Mammology..... 4, 5	Jr., sr., grad. MWF	1-2, 7-8 or 19-20 107-109, 211AB
				Johnston

\* Both semesters must be completed before credit is given for the first semester.

† So far as possible students should register for both lecture and laboratory work in the same section.

‡ Courses 51 and 56 may be combined for a year course.

No.	Credits	Title	Offered to	Prereq. courses
119-120	6	Vertebrate Histology.....	Sr., grad. 3, 4 TThS	1-2, 7-8, Anat. 111b, Downey
123-124	6*	Blood of Vertebrates.....	Sr., grad.	1-2, 7-8, Anat. 111b, 131-132 reading knowledge of French and German
131-132	6*	Embryology.....	3, 4 TThS 10, 11 MWF	Downey Jr., sr., grad. 1-2, 7-8 202, 211AB Nachtrieb
143-144	6	Genetics and Eugenics .....	2, 3, 4 TTh	Sr., grad. 1-2 201, 211AB Nachtrieb
161-162	6 or 12	Problems.....		Sr., grad. 1-2 and other courses prescribed by the department.

Hours, days, and rooms ar.

\* Both semesters must be completed before credit is given for the first semester.

1-2. **GENERAL ZOOLOGY.** A survey of the animal kingdom, emphasizing the principles of structure, physiology, embryology, classification, and evolution of animals. Textbook, lectures, and quizzes. SIGERFOOS, LUND, ALLEN.

31-32. **NATURE STUDY.** Discussions, reference, field and laboratory work, through the year, once a week and, in addition, field trips Saturday afternoons during the autumn and spring months. Especially for the fitting of teachers in secondary schools. SIGERFOOS.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin.

## ASTRONOMY

Professor FRANCIS P. LEAVENWORTH; Assistant Astronomer WILLIAM O. BEAL.

### REQUIREMENTS OF THE DEPARTMENT

*For B.A. with Honors*, the general requirements, Courses 51-52, 101-102 (as a twelve credit course), and six credits in Physics.'

*Starred courses.*—The College of Education has as yet adopted no system of starred courses. Nevertheless, candidates for the degree of Bachelor of Arts with Honors will in some cases be obliged, in order to meet the departmental requirements, to be guided by this system and should therefore consult the departmental statements in the Science, Literature, and the Arts bulletin.

### ASTRONOMICAL OBSERVATORY

The Astronomical Observatory contains a ten and one-half inch refracting telescope furnished with a third lens for converting it into a photographic telescope; a five-inch star camera; a filar micrometer; a spectroscope by Brashear; a meridian circle and zenith telescope; a Repsold photographic measuring machine; a chronograph, and astronomical clocks.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
11a	3	Descriptive Astronomy.....	Soph., jr., sr.	None
	9	MWF	124F	Leavenworth
	10	TThS	124F	Beal
11b	3	Descriptive Astronomy.....	Soph., jr., sr.	None
	11	MWF	124F	Leavenworth
	10	TThS	124F	Beal
13-14	6	Descr. Astr. and Obs. Pract...	Soph., jr., sr.	None
	9	TThS	124F	Beal
17	3	Navigation.....	All	Consult Dept.
	11	MWF	124F	Leavenworth
21-22	6	Introduction to Astronomy...	Soph., jr., sr.	None
	1	MWF	124F	Beal
51-52	6	General Astronomy.....	Jr., sr.	9 cr. in Math. or Physical Sci.
	10	MWF	124F	Leavenworth
62a	3	Elements of Pract. Astr.....	Jr., sr.	1 yr. mathematics and Ast. 11, or 13, or 51
	Ar	Ar	124F	Beal
62b	3	Elements of Pract. Astr.....	Jr., sr.	1 yr. mathematics and Ast. 11, or 13, or 51.
	Ar	Ar	124F	Beal
101-102	6 or 12	Practical Astronomy.....	Jr., sr., grad.	Math. 7 and 11 and Ast. 11, or 13, or 51.
	10	TThS	124F	Leavenworth
	or	MTWThFS	124F	Math. 51
140	3	Method of Least Squares.....	Sr., grad.	Leavenworth
	Ar	Ar	0	Leavenworth
201-202	3	Adv. Pract. Astr.....	Grad.	Astr. 102
	Ar	Ar	Ar	Leavenworth
205-206	3	Astrophotography.....	Grad.	Astr. 102
	Ar	Ar	Ar	Leavenworth
209-210	3	Calculation of Orbits.....	Grad.	Math 51
	Ar	Ar	Ar	Beal
211-212	3	Celestial Mechanics.....	Grad.	Math. 51
	Ar	Ar	Ar	Beal

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, page 38.

## BACTERIOLOGY

Associate Professor WINFORD P. LARSON; Assistant Professor ARTHUR T. HENRICI;\* Instructor ANNE BENTON; Assistants SIEGFRIED HERRMANN, HUGH T. JONES, ORVILLE N. NELSON.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
6a	3	Elementary Bacteriology.....	All	None
		M 2, 3, 4; W 2, 3	Lab., PHP	Larson, et al.
6b	3	Elementary Bacteriology.....	All	None
		M 3, 4; W 3, 4; F 3	Lab., PHP	Larson, et al.
114	1½	Advanced Bacteriology.....	All	6a or 6b
		TTh 2, 3, 4 (or 2:30-5:30)	Lab., PHP	Larson et al.

All of the above courses receive credit in the College of Education.

\* Absent on war service 1918-19.

## BOTANY

Professors CARL OTTO ROSENDAHL, JOSEPHINE E. TILDEN; Assistant Professors FREDERIC K. BUTTERS, WILLIAM S. COOPER,\* NED L. HUFF; Assistant LOIS CLARK; Teaching Fellows PAUL A. HARVEY, ARTHUR M. JOHNSON, VINNIE A. PEASE.

## REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, the general requirements: thirty-six credits in Botany, of which twenty-four shall be selected from advanced courses, 105-106 to 123-124 inclusive.

For a major recommendation eighteen credits in Botany with an average of at least one and a half honor points per credit hour, and six credits in Animal Biology. Course 121a or 121b (Methods of Teaching Botany) in the College of Education is required.

For a minor recommendation twelve credits in Botany and an average of at least one and a half honor points per credit hour. One year of Animal Biology is advised. Course 121a or 121b (Methods of Teaching Botany) in the College of Education is required.

## COURSES

No.	Credits	Sect.	Title	Offered to	Prereq.
1a-2b	3		General Botany.....	All	None
		1	Lab. 8, 9 MF	207P	
			Lect. 10 MF	210P	
		2	Lab. 11M; 10, 11 W; 11F	207P	
			Lect. 10 MF	207P	
		3	Lab. 3, 4 MF	214P	
			Lect 2 MF	210P	
		4	Lab. 8T; 8, 9 Th; 8 S	214P	
			Lect. 9 TS	210P	
		5	Lab. 10, 11 TS	214P	
			Lect. 9 TS	210P	
		6	Lab. 3, 4 TTh	207P	
			Lect. 2 TTh	210P	
		7	Lab. 8, 9 WS	202P	
		8	Lab. 1, 2, 3, 4 W	204P	
2a	3		General Botany	All	1 or equiv.
		1	8, 9 MWF	214P	
		2	2, 3, 4 TTh	214P	
5a	3		Morphology of Land Plants	All	2
		1	10, 11 MWF	204P	Butters
9	3		Physiology and Ecology...	Soph., jr., sr.	2
		1	1, 2, 3 MF	Greenhouse	Cooper
19	3		Anatomy & Histology....	Soph., jr., sr.	2
		1	2, 3, 4 TTh	204P	Butters
105-106	6		Algae.....	Jr., sr., grad.	
		1	1, 2, 3 TTh	212P	Tilden
107	3		Mosses and Liverworts....	Jr., sr., grad.	5
		1	Ar Ar	205P	Butters

\*Absent on war service.

No.	Credits	Title	Offered to	Prereq. courses
111-112	3	Advanced Taxonomy.....	Jr., sr., grad.	9 credits incl. 8
	1	Ar Ar	18P	Rosendahl
115-116	6	Advanced Plant Physiology	Jr., sr., grad.	9-10
	1	Ar Ar	Ar	
117-118		6 Cytology.....	Jr., sr., grad.	12 credits
	1	Ar Ar	18P	Rosendahl
119-120	6	Advanced Industrial Botany	Jr., sr., grad.	11-12
	1	10 Th	212P	Tilden
*121a				
121b	3	Methods.....	Jr., sr., grad.	12 credits
	1	10 MWF	Ar	Johnson
123-124	6	Taxonomy and Morphology of the Algae.....	Jr., sr., grad.	105-106
	1	10 Th	212P	Tilden
<i>Courses given only during the second semester</i>				
1b	3	General Botany.....	All	None
	1	8, 9 MWF	205P	
	2	8, 9 TThS	205P	
2b		Same program as 1a. See above.		
5b	3	Morphology of Land Plants	All	5a
	1	2, 3, 4 MF	204P	Butters
	2	8, 9 MW	204P	Butters
8	3	Taxonomy.....	Soph., jr., sr.	2
	1	10, 11 MWF	17P	Rosendahl
108	3	Pteridophytes.....	Jr., sr., grad.	5 and 19
	1	Ar Ar	205P	Butters

\*121a-121b. METHODS. Lectures, discussions, reading on principles and methods of teaching botany. Laboratory practice, field work, kind and use of material, study of the various methods of presentation from current textbooks for elementary schools. Appreciation of fundamentals of the science from standpoint of teaching. JOHNSON.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 48 to 51.

## CHEMISTRY

### THE SCHOOL OF CHEMISTRY

Professors LAUDER W. JONES,\* GEORGE B. FRANKFORTER,\* CHARLES F. SIDENER; Associate Professors EBERHART P. HARDING, WILLIAM H. HUNTER; Assistant Professors ROSS A. BAKER,\* FRANK W. BLISS,\* LILLIAN COHEN, FRANK H. MACDOUGALL, EDWARD E. NICHOLSON, H. LEE WARD; Lecturer FRED L. BARDWELL; Instructors ISAAC W. GEIGER, CARL L. SCHUMAN, WOLDEMAR STERNBERG.

### REQUIREMENTS OF THE DEPARTMENT

In Chemistry the purpose of the honors course is served by the Five-Year Course in Arts and Chemistry.

For a teacher's certificate, an average of at least one and one-half honor points for each credit hour in Courses 1-2 or 3-4 and 7-8 or 11-12; and 20.

\* Absent on war service.

## COURSES

## Division of General and Inorganic Chemistry

No.	Credits	Title	Offered to	Prereq. courses
1-2	6#	General Chemistry.....	Those entering without Chemistry	None
	8, 9	TThS	110	Cohen
	10, 11	MWF	110	Cohen
21-22	10	Inorganic and Qual. Chem.	Those entering without chemistry	None
	Lect. 1	M	100	
	Lab. 8, 9	TThS	110	
	Rec. 10	TThS	111	
3-4	6#	Adv. Gen. Chemistry and Qual. Analysis.....	Fr., soph., jr.	Entrance cr. in chemistry
	Lect. 1	T	100	
	Lab. 2, 3	MF	110	
	Rec. 2 or 3	W	111	
	Lab. 10, 11	TS	115	
	Rec. 10	Th	111	
7-8	6#	Qualitative Anal.....	Soph., jr., sr.	1-2
	8, 9	MWF	210	Nicholson
	10, 11	MWF	210	Bliss
10	1	Glass Blowing.....	Jr., sr.	Open only to those who are taking practice teaching in Chemistry
	Ar	Ar	49	Baker
17	2	Inorganic Colloquium.....	Sr.	11-12
	8	MF	111	Baker
20	2	Teachers' Course.....	Jr., sr.	3-4 or 7-8 or 21-22
	8	TTh	Ar	Geiger
167-168	4#	Adv. Inorganic Chem....	Sr.	2 yrs. college chem.
	Ar	Ar	Ar	Baker
169-170	4#	Chem. of Rare Elements..	Jr., sr.	11-12
	Ar	Ar	Ar	Nicholson

## Division of Analytical Chemistry

11-12	6 or 8#	Quantitative Analysis.....	Soph., jr., sr.	3-4 or 7-8 or 21-22 and 1 yr math. or Physics‡
	1-5	F	310	Sidener
	2-5	MW	310	Sidener
107-108	6#	Adv. Quan. Analysis.....	Jr., sr.	11-12
	Ar	Ar	317	Sidener
18	2	Organic Colloquium.....	Sr.	35-36
	8	WF	115	Schuman
35-36	8#	Organic Chemistry.....	Soph., jr., sr.	3-4 or 7-8 or 21-22 and 1 yr. Biol. Sci.
	Lect. 11	MWF	100	Hunter
	Lab. 2, 3, 4	MW	10	Schuman
	Rec. 1	W	315	Schuman
115	2	Adv. Organic Chem.....	Sr.	35-36
	9	MWF	325	Hunter
116	2	Theoretical Org. Chem.....	Sr.	35-36
	9	MWF	325	Hunter

# Both semesters must be completed before credit is given for the first.

‡ This physics may be taken at the same time.

*Division of Physical Chemistry*

No.	Credits	Title	Offered to	Prereq. courses
121-122	4#	Physical Chemistry.....	Jr., sr.	‡35-36, Physics 2 and 4
	9	WF	115	MacDougall
123-124	2#	Physico-chemical Lab.....	Jr., sr.	Must be taken in conjunction with 121-122.
	9-12	M	117	MacDougall
	2-5	F		
125-126	6#	Adv. Physical Chem.....	Sr.	121-122
	Ar	Ar	Ar	MacDougall

*Division of Technological Chemistry*

27-28	4#	Chem. in Every-Day Life..	Jr., sr.	3-4 or 7-8 or 21-22
		2-5:30	TTh	Ar Geiger

*Division of Industrial Chemistry*

15	2	Photochemistry.....	Jr., sr.	3-4 or 7-8 or 21-22
		Ar	Ar	Ward

#Both semesters must be completed before credit is given for the first semester.

**20. TEACHERS' COURSE.** For those who expect to teach Chemistry. GEIGER.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 51 to 55.

## COMPARATIVE PHILOLOGY

Professor FREDERICK KLAEBER.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
101	2	Science of Language.....	Jr., sr., grad.	See bull. st.
	2	TTh	205F	Klaeber
105	1	Universal Language.....	Jr., sr., grad.	Same as for 101.
	10	S	221F	Klaeber
106	2	The Life of Words.....	Jr., sr., grad.	Same as for 101
	2	TTh	205F	Klaeber
141-2	4	Historical Grammar of the English Language.....	Jr., sr., grad.	
	2	WF	205F	Klaeber
162	2	Phonetics.....	Jr., sr., grad.	See bull. st.
	4	MW		Kroesch

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, page 55.

## ECONOMICS

Professors WILLARD E. HOTCHKISS, GEORGE W. DOWRIE, E. DANA DURAND, JOHN H. GRAY; Professorial Lecturer J. FRANKLIN EBERSOLE; Associate Professors ROY G. BLAKELY, WILLIAM W. CUMBERLAND; Assistant Professors JOHN D. BLACK, EDWIN CLYDE ROBBINS; Instructors ALBERT C. JAMES, J. WARREN STEHMAN; in the General Extension Division, Associate Professors CHARLES H. PRESTON, CLARE L. ROTZEL.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
2	3	Industries and Commerce of the United States.....	Fr., soph. 102MA	None Robbins
		Sec. 1 8MWF	102MA	Robbins
		Sec. 2 9MWF	102MA	Robbins
		Sec. 3 2MWF	209MA	Robbins
3-4	6#	General Economics.....	Soph., jr., sr. 209MA	None Stehman
		Sec. 1 8TThS	209MA	Stehman
		Sec. 2 9TThS	209MA	Dowrie
		Sec. 3 9TThS	109MA	Stehman
		Sec. 4 10MWF	209MA	Blakey
		Sec. 5 3MWF	202MA	James
		Sec. 6 3MWF	209MA	Stehman
18	3	Problems in Agricultural Economics.....	Soph., jr., sr. Farm	3 Black
		11:40 MWF	Farm	
19	3	Marketing of Farm Prod- ucts.....	Jr., sr. U. Farm	3 Cumberland
35-36	6#	Accounting Principles.....	Soph., jr., sr. 301MA	None Ar
		Sec. 1 Lect. and Quiz 10WF	301MA	Ar
		Sec. 2 Lect. and Quiz 11TS	301MA	Ar
		Sec. 1 Lab. 1, 2T	301MA	Ar
		Sec. 2 Lab. 1, 2, Th	301MA	Ar
41	3	Financial History.....	Soph., jr., sr. 209MA	3 Blakey
43-44	6#	Mechanism of Exchange...	Soph., jr., sr. 202MA	3 Dowrie
		10 TThS	202MA	
52	3	Corporation Finance.....	Jr., sr. Ar	6 cr. incl. 3 Ar
59	3	Insurance.....	Jr., sr. 102MA	3-4 James
76	3	Commercial Policies.....	Jr., sr. 209MA	6 cr. incl. 3 Blakey
85	3	Marketing of Products....	Jr., sr. 202MA	3-4 James
86	3	Advertising and Selling....	Jr., sr. 209MA	85 James
88	3	Retail Marketing.....	Jr., sr. 213MA	6 cr. incl. 85 James
101	3	Statistics.....	Jr., sr., grad. 303MA	6 cr., incl. 3 Black
		Lect. and Quiz. 1W	303MA	
		Lab. 1, 2 MF	303MA	Black
107	3	Land Tenure.....	Jr., sr., grad. Farm	18 or 4 Black
		8:55 TThs	Farm	
108	3	Agricultural Statistics....	Jr., sr., grad. Farm	101 Black
		8:55 TThS	Farm	
123	3	Business Organization and Management.....	Jr., sr., grad. 109MA	3-4 Hotchkiss
		10 MWF	109MA	
124	3	Business & Government...	Jr., sr., grad. 109MA	3-4 Hotchkiss
		10 MWF	109MA	
131	3	Cost Accounting .....	Jr., sr., grad. 301MA	35-36 Ar
		9 MWF	301MA	

#Both semesters must be completed before credit is given for the first semester

No.	Credits	Title	Offered to	Prereq. courses
133-134	6#	Auditing.....	Jr., sr., grad.	135-136
		8 MWF	213MA	Rotzel
135-136	6#	Accounting Problems.....	Jr., sr., grad.	35-36
		11 MWF	301MA	Ar
139	3	Bank Administration.....	Jr., sr., grad.	43‡
		3 MWF	213MA	Ebersole
142a, b	3	Investments.....	Jr., sr., grad.	3 and 43
		2 MWF	202MA	Ebersole
144	3	Business Cycles.....	Jr., sr., grad.	43
		3 MWF	213MA	Ebersole
151-152	6#	Seminar in Business Policy.	Sr., grad.	123 and 3 cr. in starred courses‡
		Ar Ar		Hotchkiss
161	3	Labor Problems.....	Jr., sr., grad.	6 cr. incl. 3
		10 TThS	209MA	Robbins
173	3	Railway Problems.....	Jr., sr., grad.	6 cr. incl. 3
		9 TThS	Ar	Ar
191	3	Public Finance.....	Jr., sr., grad.	6 cr. incl. 3
		9 MWF	209MA	Blakey
192	3	State & Local Taxation....	Jr., sr., grad.	191
		9 MWF	209MA	Blakey
195-196	6#	Seminar in Finance.....	Sr., grad.	12 cr. incl. 43-44‡
		Ar Ar		Dowrie
		Ar Ar		Ebersole
261-262	Ar	Seminar.....	Grad.	12 cr. in starred courses‡
		Ar Ar		Hotchkiss et al.

#Both semesters must be completed before credit is given for the first semester.

‡ Admission conditioned also on approval of instructor.

## ENGLISH, RHETORIC, AND PUBLIC SPEAKING

Chairman for English, CARLETON BROWN; Chairman for Rhetoric and Public Speaking, JOSEPH M. THOMAS.

Professors CARLETON BROWN, RICHARD BURTON, HARDIN CRAIG,\* OSCAR W. FIRKINS, FREDERICK KLAEBER, ELMER E. STOLL, JOSEPH M. THOMAS; Associate Professor JOSEPH W. BEACH; Assistant Professors DANIEL FORD, CHARLES E. NICHOLS, GEORGE N. NORTHROP,\* ANNA H. PHELAN, FRANK M. RARIG, HELEN A. WHITNEY; Professorial Lecturer CECIL A. MOORE; Instructors THOMAS E. BREECE, ELIZABETH HAWTHORN, CYRIL A. HERRICK, JAMES T. HILLHOUSE, SIGURD B. HUSTVEDT, ELIZABETH JACKSON, RIVERDA H. JORDAN, CHARLES F. LINDSLEY, A. W. OLSTEAD, MARTIN B. RUUD, FRANK SMOYER.

## REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors in English*, the general requirements twenty-four credits in English, a reading knowledge of French, German, Italian, Greek, or Latin, and a final year's work in seminar for which a sequence shall have been specially arranged.

\*Absent on leave.

For B.A., with Honors in Rhetoric, the general requirements, a reading knowledge of either Latin, French, or German. At least fifteen credits in starred courses in Rhetoric, including Course 201-202.

For a teacher's certificate in English.

a. English as the major subject of teaching:

English 1-2, 3, 5, or 7, and 27; Rhetoric 1-2, either 11-12 or 15-16, and 41-42.

b. English as the minor subject of teaching:

English 1-2, and 3; Rhetoric 1-2, and either 11-12 or 15-16.

In order to be recommended, a student must secure an average of at least one and one-half honor points for each credit hour of all the work taken in English and Rhetoric.

For a teacher's certificate in Public Speaking, a student must satisfy the department that he is actively interested in some phase of Public Speaking either as a member of a literary or debating society, or as a participant in a contest or dramatic performance, or as a lecturer; must have the approval of the department and must complete the following courses: Rhetoric 1-2, 11-12, 15-16, 41-42, and six additional hours in Public Speaking.

#### COURSES IN ENGLISH

No.	Credits	Title	Offered to	Prereq. courses
1-2	6	General Survey Eng. Lit...	Soph., jr., sr.	Rhet. 1-2
	11	MWF	204F	
	11	MWF	212F	
	11	MWF	205F	
	11	MWF	110F	
	3	MWF	301F	
	3	MWF	204F	
	3	MWF	110F	
	3	MWF	205F	
3a	3	Old English.....	Soph., jr., sr.	1-2†
	9	TThS	110F	Firkins
3b	3	Old English.....	Soph., jr., sr.	1-2‡
	9	TThS	205F	Klaeber
5a	3	Chaucer.....	Soph., jr., sr.	1-2†
	9	TThS	204F	Brown
5b	3	Chaucer.....	Soph., jr., sr.	1-2‡
	9	TThS	110F	Firkins
7	3	Shakespeare.....	Soph., jr., sr.	1-2†
	10	TThS	301F	Stoll
27	1	History of English Lang....	Jr., sr.	3
	11	S	206F	Klaeber
51	3	Spenser.....	Jr., sr.	1-2
	2	MWF	110F	Firkins
56	3	Advanced Old English ....	Jr., sr.	1-2 and 3
	10	TThS	205F	Klaeber
58	3	Nineteenth Century Prose.	Jr., sr.	1-2
	10	MWF	301F	Beach
62	3	Milton.....	Jr., sr.	1-2
	9	MWF	204F	Moore

† This course may be taken at the same time with English 1

‡ This course may be taken at the same time with English 2.

No.	Credits	Title	Offered to	Prereq. courses
65	3	Browning and Tennyson...	Jr., sr.	1-2
	10	MWF	301F	Burton
*80a	3	Teachers' Course.....	Jr., sr.	See statement
	3-4:30	TTh	206Ed	Inglis
*80b	3	Teachers' Course.....	Jr., sr.	See statement
	3-4:30	TTh	206Ed	Inglis
105	3	Eighteenth Century Poetry	Jr., sr., grad.	1-2 and 6 cr. in courses below 10
	9	MWF	204F	Moore
113-114	6	Drama.....	Sr., grad.	1-2, 7, and 3 cr. in courses below 10
	3	MWF	206F	Firkins
117	2	Bible as Literature.....	Jr., sr., grad.	1-2 and 6 cr. in courses below 10
	11	TTh	107F	Burton
119-120	6	Prin. of Lit. Criticism.....	Jr., sr., grad.	1-2, and 6 cr. in courses below 10
	10	TThS	204F	Firkins
123-124	4	Studies in Victorian Novelists.....	Sr., grad.	1-2, and 6 cr. in courses below 10
	3, 4	T	221F	Beach
129	3	Modern Drama.....	Sr., grad.	1-2, 7, and 3 cr. in courses below 10
	11	MWF	301F	
136	3	Advanced Shakespeare....	Jr., sr., grad.	1-2, 7 and 3 cr. in courses below 10
	10	TThS	304F	Stoll
140	2	Advanced Chaucer.....	Jr., sr., grad.	1-2, 5a or 5b, and 3 credits in courses below 10
	9	TTh	204F	Brown
141-142	4	Historical English Grammar.....	Jr., sr., grad.	1-2, 3, and 27
	2	WF	205F	Klaeber
145	3	Medieval Allegory.....	Jr., sr., grad.	1-2, and 6 cr. in courses below 10.
	10	TThS	302F	Brown

## COURSES IN RHETORIC

No.	Credits	Title	Offered to	Prereq. courses
1-2	6	Composition and Rhetoric.	Fr.	None
	8	MWF	To be assigned on registration	
	9	MWF	To be assigned on registration	
	11	MWF	To be assigned on registration	
	2	MWF	To be assigned on registration	
	3	MWF	To be assigned on registration	
	8	TThS	To be assigned on registration	
	9	TThS	To be assigned on registration	
	10	TThS	To be assigned on registration	
1b	3	Composition and Rhetoric.	Fr.	None
	10	MWF	To be assigned on registration	
	3	MWF	To be assigned on registration	
	8	TThS	To be assigned on registration	

\* This carries credit only in Department of Education.

No. Credits	Title	Offered to	Prereq. courses
2a 3	Composition and Rhetoric.	Fr.	None
10	MWF	To be assigned on registration	
3	MWF	To be assigned on registration	
8	TThS	To be assigned on registration	
3-4 6	Composition for Engineers	Fr. Eng.	None
	See program for the College of Engineering		
11-12 6	Exposition, Description, Narration.....	Soph., jr., sr.	1-2
9	MWF	311F	Hillhouse
10	MWF	311F	Ruud
11	MWF	305F	
2	MWF	306F	Phelan
9	TThS	311½F	Whitney
10	TThS	306F	Phelan
15-16 6	Exposition and Argument..	Soph., jr., sr.	1-2
9	MWF	303F	Ford
11	TThS	305F	
31 2	Technical Writing.....	Sr. Eng.	3-4
	See program for the College of Engineering		
*80a 3	Teachers' Course.....	Jr., sr.	See note
3-4:30	TTh	206Ed	Inglis
*80b 3	Teachers' Course.....	Jr., sr.	See note
3-4:30	TTh	206 Ed	Inglis
103-104 6	Studies in Structure and Style.....	Jr., sr., grad.	1-2, 11-12, or 15-16
2	MWF	203F	Ford
107 3	Imitative Writing.....	Jr., sr., grad.	See note
11	MWF	304F	Thomas
110 3	Short-Story Writing.....	Jr., sr., grad.	See note
11	MWF	304F	Thomas
119-120 4	Seminar in Writing.....	Sr., grad.	See note
1:30-3:20	T	302F	Thomas
201-202 6	Seminar in Rhetoric.....	Sr., grad.	See note
1:30-3:20	Th	302F	Thomas

80. Open to juniors, seniors, graduates, qualifying for a certificate to teach English as a major or minor subject. Credit only in Education.

102. Open to those who have taken 11-12 or 15-16, and have taken or are taking six hours in the historical study of English poetry.

107, 110. Open to those who have taken 11-12 or 15-16 and have received a grade of A or B in either semester.

119-120. Open with special permission to seniors and graduates. Prerequisites: Courses 1-2, 11-12, and at least one other course in Rhetoric.

201-202. Open to graduates and to seniors taking the honors course. Prerequisites: Courses 1-2, 11-12, or 15-16, and at least one other course.

#### COURSES IN PUBLIC SPEAKING

No. Credits	Title	Offered to	Prereq. courses
41-42 6	Public Speaking.....	Soph., jr., sr.	1-2
8	MWF	308F	Lindsley
9	MWF	308F	Olmstead
10	MWF	308F	Olmstead

\* This carries credit only in the Department of Education.

No.	Credits	Title	Offered to	Prereq. courses
	2	MWF	308F	Rarig
	8	TThS	308F	Olmstead
	9	TThS	308F	Lindsley
	10	TThS	308F	Lindsley
45-46	6	Argumentation and Debate	Soph., jr., sr.	See note
	10	MWF	306F	Lindsley
47	3	Advanced Debate..... Ar	308F	See note
81-82	6	Interpretative Reading....	Jr., sr.	1-2, 41-42
	11	MWF	308F	Rarig
83-84	6	Advanced Public Speaking.	Jr., sr.	1-2, 41-42
	3	MWF	308F	Rarig

45-46. Open to those who have completed 1-2 and 41-42, or 1-2 and have had training in debating in preparatory school.

47. Open to juniors and seniors who are awarded places on the inter-collegiate debating squad, or are chosen to represent the University in the Northern Oratorical League contest.

80a,b. **TEACHERS' COURSE.** Methods of teaching English in high schools. Course of study, textbooks, and equipment; visits to high schools; theme correcting. Open to juniors, seniors, graduates qualifying for a certificate to teach English as a major or minor subject. Credit only in Education. INGLIS.

All the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 67 to 76.

## GEOLOGY AND MINERALOGY

Professors WILLIAM H. EMMONS, CLINTON R. STAUFFER; Associate Professor FRANK F. GROUT; Assistant Professors A. WALFRED JOHNSTON, CHESSLEY J. POSEY, TERENCE T. QUIRKE; Instructor THOMAS M. BRODERICK; in the General Extension Division, Assistant Professor EDWARD M. LEHNERTS

### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits.

*For a major*, twenty-four credits. It is strongly recommended that a field course be included when this is practicable.

*For B.A. with Honors*, Courses 11, 29, 105, 111, 124, and a field course; and twelve credits selected from the following courses:

57, 58, 108, 109 in Paleontology

106, 131, 132, 140 in Petrology

112, 124, 137, 140, 144 in Economic Geology

106, 112, 124 in Structural Geology

36, 39, 116, 118 in Geography

*For a teacher's certificate in geography*:

A. Major recommendation: 21 credits; Courses 29, 30, 36, 55, 116 or 118 required, and the remaining credits from Courses 5, 34, 35, 37, 116, or 118, 188.

B. Minor recommendation: 15 credits; Courses 29, 30, 36, 55 required, and the remaining credits from Courses 5, 34, 37, 39, 116, 118, 188.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	3*	General Geology.....	Soph., jr., sr.	None
	8	MWF	105P	Johnston
	10	TThS	110P	Emmons
	11	MWF	110P	Johnston
	3	MWF	110P	Johnston
3	1	General Geology Lab.....	Soph., jr., sr.	Supports 1
		Ar	112P	Johnston
4	3	Geology of Minnesota.....	Soph., jr., sr.	Course 1
	11	MWF	110P	Johnston
5	3	Economic Geology.....	Jr., sr.	1 and 6
	9	MWF	104P	Quirke
6	3*	Historical Geology.....	Soph., jr., sr.	Course 1
	8	MWF	105P	Johnston
	10	TThS	110P	Emmons
	11	TThS	105P	Quirke
	3	MWF	105P	Quirke
8	1	Historical Geology Lab....	Soph., jr., sr.	Supports 4 and 6
		Ar	112P	Johnston
10	3	Elements of Paleontology..	Soph., jr., sr.	Course 1
	10	MWF	104P	Stauffer
11	3	Paleontology.....	Jr., sr.	Course 6
	Lect. 9	M	104P	Stauffer
	Lab. 2-4	WF	104P	Stauffer
12	3	Paleontology.....	Jr., sr.	Course 11
	Lect. 9	M	104P	Stauffer
	Lab. 2-4	WF	104P	Stauffer
14	3	Applied Geol. for Civ. Eng.	Soph., jr., sr.	Course 1
	8	TThS	110P	Quirke
15a or 15b	1	Minerals and Rocks.....	Jr., sr.	1
		Ar	100P	Grout
21	3	Elements of Mineralogy...	Soph., jr., sr.	See bulletin statement
	Lect. 11	TThS	110P	Broderick
	Lab. 8	TThS	100P	Broderick
	Lab. 10	TThS	100P	Broderick
	Lab. 2-5	W	100P	Broderick
22	3	Descriptive Mineralogy...	Soph., jr., sr.	21
	Lect. 11	TThS	110P	Broderick
	Lab. 10	TThS	100P	Broderick
27a or 27b	1	Outlines of Mineralogy....	Jr., sr.	None
		Ar	100P	Grout
29	3	General Physiography.....	Soph., jr., sr.	None
	10	TThS	105P	Posey
30	3	Principles of Geography...	Soph., jr., sr.	None; 29 desirable
	10	MWF	105P	Posey
34	3	Meteorology.....	Soph., jr., sr.	None
	8	TThS	105P	Posey
35	1	Laboratory work.....	Soph., jr., sr.	See bulletin statement
		Ar	104P	Posey

\* Geology 1 and 6 constitute a year's course; both semesters must be completed before credit is given for the first semester.

No.	Credits	Title	Offered to	Prereq. courses
36	3	Geog. of North America...	Jr., sr., grad.	1 or 29 and 3 credits from 5, 6, 30, 34, 39
		10 TThS	105P	Posey
37	3	Physical and Com. Geog...	Fr.	None
		9 MWF	204P	Posey
39	3	Geographic Influences.....	Jr., sr., grad.	3 cred. from 1, 29, 30, and History 5 or its equivalent
		10 MWF	105P	Posey
55	3	Teachers' Course in Geog..	Jr., sr., grad.	Any one of 36, 39, 116, or 118
		8 TThS	105P	Posey
57	3	Paleontology.....	Jr., sr.	6
		9-11 TThS	104P	Stauffer
58	3	Paleontology.....	Jr., sr.	57
		9-11 TThS	104P	Stauffer
61	3	Physical Mineralogy.....	Jr., sr.	22
		Ar	Ar.P	Grout
65	3	Morphology of Minerals...	Jr., sr.	22
		Ar	Ar.P	Grout
105	3	Elements of Rock Study...	Jr., sr., grad.	See bulletin statement
		2-4 TTh	200P	Grout
106	3	Petrology.....	Jr., sr., grad.	105
		2-4 TTh	200P	Grout
108	3	Paleontologic Practice....	Jr., sr., grad.	58
		2-4 MWF	107P	Stauffer
109	3	Advanced Paleontology...	Jr., sr., grad.	58
		8-10 MWF	107P	Stauffer
110	3	Advanced Paleontology...	Jr., sr., grad.	109
		8-10 MWF	107P	Stauffer
111	4	Ore Deposits.....	Sr., grad.	6, 22, 105
		8 TWThF	110P	Emmons
112	4	Problems in Ore Deposits..	Sr., grad.	111
		2-6 W	104P	Emmons
116	3	Geog. of Latin America...	Jr., sr., grad.	6 cred. from 1, 6, 29, 30, 34, 36, 39
		9 MWF	105P	Posey
118	3	Geog. of Eurasia.....	Jr., sr., grad.	Same as for 116
		9 MWF	105P	Posey
124	3	Structural & Metam. Geol.	Sr., grad.	6, 22, 105
		10 TThS	112P	Johnston
131-132	6	Advanced Petrology.....	Jr., sr., grad.	106
		Ar	200P	Grout
137	3	Testing Econ. Minerals...	Jr., sr., grad.	6, 22, 105
		Lect. 11 MW	200P	Grout
		Lab. 2-4 W	200P	Grout
140	3	Applied Petrology .....	Jr., sr., grad.	See bulletin statement
		Ar	200P	Grout
144	3	Construction of Geol. Maps	Jr., sr., grad.	1, 6
		Ar	112P	Quirke
151	3	Advanced General Geol....	Jr., sr., grad.	6
		11 MWF	104P	Stauffer
152	3	Advanced General Geol...	Jr., sr., grad.	151
		11 MWF	104P	Stauffer
160	6	Field Geology.....	Jr., sr., grad.	See bulletin statement
188	6	Field Work in Geography..	Jr., sr., grad.	See bulletin statement

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 76 to 82.

55. TEACHERS' COURSE IN GEOGRAPHY. A critical study of materials and methods of teaching secondary school geography. The relation of human activities to environment will be emphasized. For teachers of high-school geography. Prerequisites: Geology 1 or 29, and 36 or 116 or 118. POSEY.

### GERMAN

Professor CARL SCHLENKER; Assistant Professors OSCAR C. BURKHARD, JAMES DAVIES, ALFRED E. KOENIG, SAMUEL KROESCH, WALTER R. MYERS; Instructors ARTHUR R. GRAVES, EDWIN H. ZEYDEL; Scholars OTTO F. KUHLMANN, GLADYS MORIETTE, CLARA V. PETERSEN.

#### REQUIREMENTS OF THE DEPARTMENT

*For B.A. with Honors*, the general requirements, and fifteen credits during the junior year in courses numbered between 51 and 100, of which Courses 53-54 and 55-56 are required; eight credits during the senior year, including at least one course numbered between 101 and 200, and one course numbered above 200; and the special thesis, to be completed under the direction of the instructor in charge of the latter course.

*Teacher's certificate in German*. For a minor recommendation, a minimum of fourteen credits; required courses are German 29-30, 31-32 and 59-60. For a major recommendation, a minimum of twenty-eight credits; required courses are German 29-30, 31-32, 53-54, 55-56, and 59-60. German 57-58 is strongly recommended. German 1 and 3 shall not be counted toward either a minor or a major recommendation. To obtain either a minor or a major recommendation the student must obtain an average of one and one half honor points for each credit hour for all German courses taken.

For courses in Germanic Philology see the statement of the Department of Comparative Philology.

#### COURSES

a. Only students who are taking or who have taken Course 5-6 or Course 16 may elect the supplementary courses 25-26 and 27-28, either one or both. But students electing Course 11-12 or Course 14 may elect Course 25-26. No credit will be granted for Course 25-26 or Course 27-28 if students elect them when taking or when they have taken courses numbered above 50.

b. Only students who are taking or who have taken Course 7-8 or Course 9-10 or Course 11-12 or Course 14 or Course 21-22 or Course 23-24 may elect the supplementary courses 29-30 and 31-32, either one or both together. Students electing Course 11-12 or Course 14 or Course 21-22 should take courses 29-30 and 31-32 only after consultation with the instructor in charge.

c. Credit for only one of the following courses will be granted:  
Courses 5-6, 16, 21-22.

d. Credits for only one of the following courses will be granted:  
Courses 7-8, 9-10, 11-12, 14, 21-22, 23-24.

## COURSES

No.	Credits	Title		Offered to	Prereq. courses
51	2	Faust, Part I.....	11	Soph., jr., sr. 209½F	WF 7-8 or 11-12 or 14 or 23-24 Schlenker
53	3	Survey through Classic Period.....	9	Soph., jr., sr. 209F	MWF Burkhard
			9	209F	TThS Myers
54	3	Survey since Classic Period	9	Soph., jr., sr. 209F	MWF 53
			9	209F	TThS Burkhard
			9	209F	Myers
55-56	2*	Advanced Composition....	3	Jr., sr. 209F	F 31-32
59-60	2*	Teachers' Course.....	4	Jr., sr. 209F	F 29-30 and 31-32 or 53-54
61	2	Romantic School.....	11	Jr., sr. 209½F	TTh Schlenker
62	2	Drama since 1880.....	11	Jr., sr. 209½F	TTh 2 cr. in starred courses
63	2	Schiller's Poems.....	10	Soph., jr., sr. 212F	WF Schlenker
64	2	Goethe's Poems.....	10	Soph., jr., sr. 212F	WF Koenig
107-108	6*	Middle High German .....	3	Jr., sr., grad. 207F	MWF 2 cr. in starred courses
127-128	6	Eighteenth and Nineteenth Century Lyric .....	1-3, M, I F	Sr., grad. 209½F	4 cr. in starred courses
135	3	The Drama of Kleist.....	1-4	Sr., grad. 209½F	Th Davies
136	3	The Drama of Hebbel.....	1-4	Sr., grad. 209½F	Th 4 cr. in starred courses
137-138	6*	Aspects of 19th Century Literature .....	1-3W	Sr., grad. 209F	2F Burkhard
145-146	6*	Grillparzer.....	4	Sr., grad. 212F	MWF 4 cr. in starred courses
162	2	Phonetics.....	4	Sr., grad. 207F	MW Graves
225-226	6*	Literary Problems.....	2-5T	Honors and grad. 209½F	4 cr. in starred courses
				Schlenker	Kroesch

\* Both semesters must be completed before credit is given for either semester. For beginning and intermediate courses see S. L. A. bulletin.

All of the above courses carry credit in the College of Education. For Description see College of Science, Literature, and the Arts bulletin, pages 83 to 88.

## GREEK

Professors CHARLES ALBERT SAVAGE, GERTRUDE H. BEGGS.

## COURSES

No. Credits	Title	Offered to	Prereq. courses
1-2 10*	First Year Greek.....	Fr., soph., jr., sr. None	
9	TWTHFS	114F	Savage
1	MTWTHF	114F	Beggs
3-4 6*	History of Epic Poetry....	Fr., soph., jr., sr. 1-2	
10	MWF	114F	Savage
51 3	Philosophy.....	Jr., sr. 3-4	
10	TThS	114F	Savage
52 3	Oratory.....	Jr., sr. 3-4	
10	TThS	114F	Savage
101 3	Lyric Poetry.....	Sr., grad. 51-52	
11	MWF	113F	Savage
102 3	Tragedy.....	Sr., grad. 7 or 101	
11	MWF	113F	Savage

*Courses open to all. No knowledge of Greek required.*

59 1	Greek Architecture.....	Jr., sr. None	
	2 M	114F Beggs	
60 1	Sculpture.....	Jr., sr. None	
	2 M	114F Beggs	
61 2	Drama.....	Jr., sr. None	
	2 TTh	114F Savage	
62 2	Literature and Life.....	Jr., sr. None	
	2 TTh	114F Savage	
63a, b 1	Mythology.....	Jr., sr. None	
	3 Th	114F Savage	

\* Both semesters must be completed before credit is given for the first semester.

## HISTORY

Professors GUY STANTON FORD, WILLIAM STEARNS DAVIS, NORMAN SCOTT BRIEN GRAS, WALLACE NOTESEN, ALBERT BEEBE WHITE; Associate Professors SOLON J. BUCK, AUGUST CHARLES KREY; Assistant Professors LESTER BURRELL SHIPPEE, MASON WHITING TYLER; Instructor GEORGE MALCOLM STEPHENSON; Teaching Fellows ALICE H. FELT, PAUL S. SMITH, GEORGINA TALBOT; Assistants MARY S. GOLD, FAITH THOMPSON.

## REQUIREMENTS OF THE DEPARTMENT

*For B.A. with Honors, see general statement, page 15.**For a teacher's certificate, eighteen credits in History, including at least three credits in intensive courses. In addition the student must take History 56-7.*

## COURSES

No. Credits	Title	Offered to	Prereq. courses
1-2 6	Med. and Modern Europe.	All	None
Lecture 11	T	100C	Ford, Krey, Tyler
9	ThS	Ar	
10	ThS	Ar	
11	MF	Ar	
3	MF	Ar	

No.	Credits	Title	Offered to	Prereq. courses
2a-1b	6	Med. and Modern Europe.	All	None
	10	TThS	101F	
3-4	6	English, 1066 to present...	All	None
	Lecture 11	T	Law Lect.	White
	Lecture 11	T	301F	Notestein
	9	WF	112Lb	
	9	TTh	112Lb	
	10	WF	112Lb	
	10	TTh	112Lb	
	11	WF	112Lb	
	2	WF	112Lb	
	3	WF	112Lb	
5-6	6	American History .....	Soph., jr., sr.	6 credits
	(Lecture) 10	MW	110P	Shippee
	10	Th	15F	
	10	F	110P	
	11	F	3F	
7-8	6	English History, 1815-1918.	Soph., jr., sr.	6 credits
	2	MWF	218Lb	Notestein
9	3	Intr. to Economic History..	Soph., jr., sr.	6 credits
	- 10	TThS	218bLb	Gras
10	3	Economic History of the U. S.....	Soph., jr., sr.	See statement
	10	TThS	218bLb	Gras
13	3	Medieval Civilization.....	Soph., jr., sr.	6 credits
	9	MWF	218bLb	Krey
14	3	Renaissance and Reformation.....	Soph., jr., sr.	6 credits
	9	MWF	218bLb	Krey
15	3	Military History.....	See note	
	10	TThS	111Lb	Davis
21	3	Outlines of Greek History..	Jr., sr.	9 credits
	10	MWF	218bLb	Davis
22	3	Outlines of Roman History	Jr., sr.	9 credits
	10	MWF	218bLb	Davis
56-57	3	Teachers' Course.....	Jr., sr.	See statement
	4	MW	111Lb	Krey
61	3	Recent American History..	Jr., sr.	9 credits (inc. 5-6)
	2	MWF	9F	Shippee
101	3	French Revolution.....	Jr., sr., grad.	9 credits
	11	MWF	111Lb	Ford
104	3	The Near East.....	Jr., sr., grad.	9 credits
	10	TThS	111Lb	Davis, Tyler
106	3	Europe and the Far East...	Jr., sr., grad.	9 credits
	4	MWF	218bLb	Davis, Tyler
107-108	6	Europe, 1815-1914.....	Jr., sr., grad.	9 credits
	3	MWF	111Lb	Tyler
115-116	6	Economic History of Europe, 1300-1750.....	Jr., sr., grad.	9 credits
	9	TThS	218bLb	Gras
133-134	6	Ancient Civilization.....	Jr., sr., grad.	See statement
	11	MWF	218bLb	Davis
137	3	English Constitutional Hist. 4-5:30	Jr., sr., grad.	9 credits
	TTh		218bLb	White
141	3	West in American History.	Jr., sr., grad.	9 credits (inc. 5-6)
	3	MWF	218bLb	Buck
144	3	History of Minnesota .....	Jr., sr., grad.	9 credits (inc. 5-6)
	3	MWF	218bLb	Buck

No.	Credits	Title	Offered to	Prereq. courses
156	3	Civil War and Reconstruction..... 2-3:30 TTh	Sr., grad. 218bLb	12 credits (inc. 5-6) Shippee
159-160	6	Diplomatic History of Europe, 1850-1914..... 2-3:30 TTh	Sr., grad. 128bLb	See statement Tyler
162	3	Beginnings of Parliament.. 4-5:30 WF	Jr., sr., grad. 218aLb	See statement White
174	3	Biographical Studies..... Ar	Sr., grad. 218aLb	See statement Ford
183	3	Stuart Period..... 4-5:30 WF	Sr., grad. 218aLb	12 credits (inc. 3-4) Notestein
191	3	Age of the Crusades..... 1:30-3:00 TTh	Sr., grad. 218aLb	See statement Krey

56-57. TEACHERS' COURSE. Open only to students who have eighteen credits in history, including a starred course. Deals chiefly with the practical problems of teaching history and government in the secondary schools. Students planning to teach government must have nine credits in Political Science. KREY.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 89 to 95.

### HUMAN ANATOMY THE MEDICAL SCHOOL

Professors CLARENCE M. JACKSON, JOHN B. JOHNSTON, THOMAS G. LEE, RICHARD E. SCAMMON; Associate Professor CHARLES A. ERDMANN; Assistant Professor ANDREW T. RASMUSSEN; Instructor JAY A. MYERS.

#### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits.

*For a major*, twenty-four credits.

Prerequisites in Animal Biology may be counted as a part of the work for a minor or major.

#### COURSES

No.	Credits	Title	Offered to	Prereq. courses
3-4	10	Gross Human Anatomy ... Lab. 8, 9, 10, 11 TThS Lect. 1 MW	Soph., jr., sr. 304-308IA	An. Biol. 1-2 Jackson, et al
101	5	Human Histology..... Lab. 8, 9, 10 MWF Lect. 11 WF	Jr., sr., grad. 106-108IA	An. Biol. 7-8 Scammon, et al
102	3	Human Embryology..... Lect. 1 TTh Quiz. 11 S Lab. 3, 4, 5 M or Th or S	Jr., sr., grad. 102IA	An. Biol. 7-8 Scammon
103	3	Human Neurology..... Lab. 8, 9, 10 ThS	Sr., grad. 108-214- 215 IA	Anat. 101 and 102, or An. Biol. 7-8 or 19-20 Johnston, Rasmussen, et al.

No. Credits	Title	Offered to	Prereq. courses
111a, b 3	Anatomical Technique . . . . 1, 2, 3 TTh	Soph., jr., sr. 113 IA Lee	Histology or Embryol.
114 3	Topographic Anatomy . . . . Lab. 1, 2, 3 TTh	Sr., grad. 313IA Jackson	3-4
115 3	Fetal Anatomy. . . . . Lab. Ar TTh	Sr., grad. 201A Scammon	3-4 and 102 or An. Biol. 137

General Zoology (Animal Biology) is an additional prerequisite for all courses in Human Anatomy.

*Note:* Since the number of students in Anatomy Courses 3-4, 101, and 102 is limited students will not be permitted to register for these courses without written permission from the head of the department.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 89 to 99.

## HUMAN PHYSIOLOGY

Professors ELIAS P. LYON, FREDERICK H. SCOTT; Associate Professors RICHARD OLDRING BEARD, JOHN E. MCCLENDON; Assistant Professors FRANCIS B. KINGSBURY,\* CHAUNCEY J. V. PETTIBONE, M. RUSSEL WILCOX; Assistants CHARLES C. GAULT, ALBERT M. SNELL.

### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits, which may include Animal Biology 1-2.

*For a major*, Animal Biology 1-2 and eighteen credits, including Physiology 102, 103, and 104. In these eighteen credits may be included Anatomy 101 and Animal Biology 15-16.

### COURSES

No. Credits	Title	Offered to	Prereq. courses
1-2 2 or 4	Physiology and Hygiene . . . 9-12 S	All	None
3a, 3b†	Elem. Human Physiology . . . 1:30-4 T 1:30-5 Th	Soph., jr., sr. 214MH	1 yr. Chem., half yr. Biol. Beard, or Lyon, et al.
4 3†	Elementary Physiology . . . . 9-10 T 9-12 Th 9-10 S	Soph., jr., sr. 214, 301MH	Elem. Chem. and Biol. or Anat.
6 3†	Elem. Physiol. Chemistry . . . 10-12 T 10-12 S	Soph., jr., sr. 214, 310MH	Beard or Lyon et al. Elem. Chem. and Biol. or Anat.
102 5	Physiologic Chemistry . . . . 8-11 MW 8-12 F	Jr., sr., grad. 214, 310MH	Pettibone, et al Organic Chem.
103 4	Physiol. Muscle, etc. . . . . 1-3 M 1-4:30 W 1-3:30 F	Jr., sr., grad. 214, 301MH	An. Biol. 1-2 and 7-8 or Anat. 101 Scott, et al.

\* Absent on war service.

† Students may not receive credit for both Courses 3 and 4.

No. Credits	Title	Offered to	Prereq. courses
104 4	Physiol. Nerv. Sys., etc....	Jr., sr., grad.	An. Biol. 1-2 and 7-8 or Anat. 101
	1-3 M		
	1-4 W		
	1-4 F	214, 301MH	Lyon, et al.
151-152 6	Physiologic Chemistry ....	Jr., sr., grad.	Organic Chem.
	1-4 TTh	305, 310MH	Kingsbury, et al.

**1-2. HUMAN PHYSIOLOGY.** A course in the essentials of human physiology and hygiene, planned to afford teachers a helpful knowledge of the human subject when they are engaged in teaching. Offered to public school teachers and others. BEARD and Assistants.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 99 to 101.

## LATIN

Professors JOSEPH B. PIKE, JOHN E. GRANRUD.

### REQUIREMENTS OF THE DEPARTMENT

*For a teacher's minor recommendation*, Courses 5, 6, 57, 58, and 101.

*For a major recommendation*, the same courses with the addition of Course 102, with an average of at least one and one-half honor points per credit hour.

*For B.A. with Honors*, the general requirements, and a fair reading knowledge of German or French or Greek. Six credits in Latin a semester during the junior and senior years are to be selected from Courses 57 to 203. (Students who do not desire a recommendation for teaching Latin may, by selecting courses that are given in alternate years, secure enough work for the honors course without being obliged to take Course 101 or 102.) Instead of taking all the work indicated above in Latin, the student may substitute six credits in Greek (third-year Greek or above), or six credits in Greek or Roman History, or six credits in ancient Philosophy.

### COURSES

No. Credits	Title	Offered to	Prerequisite courses
1 6	Beginning Latin.....	All	None
	9 MTWThFS	107F	
2 6	Selections from Caesar*...	All	1
	9 MTWThFS	107F	
3 3	Select. from Latin Authors.	All	1-2 or 2 or 3 yrs. prep. Latin.
	10 MWF	109F	
4 3	Select. from Latin Authors†	All	1-2 or 2 or 3 yrs. prep. Latin
	10 MWF	109F	
5 3	Livy.....	All	3-4 or 4 yrs. prep. Latin
	10 TThS	109F	

\* Students entering at mid-year with one year of Latin may take Course 2.

† Students entering at mid-year with two or three years of Latin may take Course 4.

No.	Credits	Title	Offered to	Prereq. courses
6	3	Plautus and Terence‡.....	All	3-4 or 4 yrs. prep. Latin
		10 TThS	109F	
57	3	Horace.....	Soph., jr., sr.	6
		9 MWF	109F	Pike
58	3	Pliny.....	Soph., jr., sr.	57
		9 MWF	109F	Pike
101	3	Advanced Caesar.....	Jr., sr.	58
		9 TThS	109F	Pike
102	3	Advanced Virgil.....	Jr., sr.	101
		9 TThS	109F	Pike
103	2	The Roman Novel.....	Jr., sr.	58
		11 TS	109F	
107	3	Cicero De Officiis.....	Jr., sr., grad.	58
		11 MWF	107F	Granrud
110	3	Roman Satire.....	Jr., sr., grad.	58
		11 MWF	107F	Granrud
111		Vulgar Latin.....		6
		See statement		Pike
112	2	Law and Medieval Latin...	Soph., jr., sr.	6
		11 TS	109F	Pike
9	1	Roman Private Life.....	Jr., sr.	None
		2 TTh	107F	Granrud
10	1	Roman Art.....	Jr., sr.	None
		2 TTh	107F	Granrud
201-202	3	Lucretius.....	Grad. and honor	Consult dept.
		See statement		Pike
203-204	3	Seneca.....	Grad. and honor	Consult dept.
		3, 4, 5 F	109F	Pike

101. ADVANCED COURSE IN CAESAR. TEACHERS' COURSE. Selections from books five to seven of the Gallic War; the principles of indirect discourse; intermediate Latin composition; class drill and discussion of various problems connected with secondary school work in Latin. PIKE.

‡ Students entering at mid-year with four years of Latin may take Course 6.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 101 to 104.

## MATHEMATICS

Professors GEORGE N. BAUER, FRANCIS P. LEAVENWORTH; Associate Professors WILLIAM H. BUSSEY, ROYAL R. SHUMWAY; Assistant Professors HERMON L. SLOBIN, ANTHONY L. UNDERHILL; Instructors RALPH M. BARTON, RAYMOND W. BRINK, WILLIAM D. REEVE; Assistant ELLA THORP.

### REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, the general requirements: In junior and senior years any course above 50 may be presented (except Course 54). Astronomy 101-102, and with the consent of the Department of Mathematics,

other courses in Astronomy and Physics open only to juniors and seniors may be presented.

*For teacher's certificate.*

- a. Mathematics as the minor subject of teaching;  
Mathematics 1-2 or 3-4 or 5; 6 if not offered for entrance;  
9; 11; 54.
- b. Mathematics as the major subject of teaching;  
Mathematics 1-2 or 3-4 or 5; 6 if not offered for entrance;  
9; 11; 54; and six other credits in the department.

In order to be recommended, a student must secure an average of one and one-half honor points per credit hour in the work required and an average of one honor point per credit hour in all other work taken in the department.

#### COURSES

Year courses for freshmen and sophomores. Course 1-2 is a year course open to students who presented for entrance one unit of elementary algebra. Course 3a-4b and Course 5-9b are two alternative year courses open to those who presented for entrance one unit of elementary algebra and one-half unit of higher algebra. Students who intend to specialize in Mathematics are advised to take Course 5-9b. Course 9a-11b is a year course for sophomores who had Course 1-2 or Course 3a-4b in the freshman year. Course 11a-51b is a year course for sophomores who had Course 5-9b in the freshman year.

No.	Credits	Title	Offered to	Prereq. courses
1-2	10	Algebra I, II, and Pl. Trig.	Fr., Soph.	Elem. Algebra
	9	TWThFS	104F	¶
	11	TWThFS	104F	¶
	2	MTWThF	104F	¶
1b	5	Algebra I.....	Fr., soph.	Elem. Algebra
	1	MTWThF	104F	¶
3a	3	Algebra II.....	Fr., soph.	Prep. Higher Algebra
	10	MWF	104F	¶
	10	TThS	104F	¶
	2	MWF	102F	¶
	3	MWF	125F	¶
3b	3	Algebra II.....	Fr., soph.	Prep. Higher Algebra
	10	TThS	105F	¶
4a	3	Trigonometry.....	Fr., soph.	3
	10	MWF	102F	¶
4b	3	Trigonometry.....	Fr., soph.	3
	10	MWF	104F	¶
	10	TThS	104F	¶
	2	MWF	102F	¶
	3	MWF	102F	¶
5	5	Algebra II and Pl. Trig....	Fr., soph.	Prep. Higher Algebra
	9	TWThFS	105F	¶
	10	TWThFS	105F	¶
6	3	Solid Geometry.....	Soph., jr., sr.	1-2 or 3-4 or 5-9 who have not had Solid Geometry
	11	MWF	102F	Bussey

No.	Credits	Title	Offered to	Prereq. courses
9a	5	Pl. and Sol. Anal. Geom.....	Soph., jr., sr.	2 or 4 or 5
	10	TWThFS	125F	Brink
	2	MTWThF	125F	Barton
9b	5	Pl. and Sol. Anal. Geom.....	Fr., soph., jr., sr.	2 or 4 or 5
	9	TWTHFS	105F	Slobin
	10	TWThFS	125F	Barton
11a	3	Differential Calculus.....	Soph., jr., sr.	7 or 9
	9	TThS	102F	Bauer
	11	MWF	102F	Brink
11b	3	Differential Calculus.....	Soph., jr., sr.	7 or 9
	10	TThS	102F	Brink
	2	MWF	125F	Barton
51a	3	Integral Calculus.....	Soph., jr., sr.	11
	11	MWF	101F	Bussey
51b	3	Integral Calculus.....	Soph., jr., sr.	11
	9	TThS	102F	Bauer
	11	MWF	101F	Brink
54a	2	Teachers' Course.....	Jr., sr.	11
	4	TTh	115Ed	Reeve
54b	2	Teachers' Course.....	Jr., sr.	11
	4	TTh	115Ed	Reeve
62	3	Theory of Equations.....	Jr., sr.	11
	2	MWF	102F	Bussey
71	3	Solid Anal. Geom.....	Jr., sr.	11
	9	MWF	102F	Shumway
104	3	Med. Synthetic Geometry.	Jr., sr., grad.	11
	9	MWF	102F	Shumway
107	3	Adv. Differential Calculus.	Jr., sr., grad.	51
	11	MWF	125F	Slobin
108	3	Adv. Integral Calculus....	Jr., sr., grad.	107-51
	11	MWF	102F	Slobin

Any of the following courses for which a sufficient number of students apply will be given in 1918-19:

106a or 106b	3	Differential Equations.....	Sr., grad.	51, 62
119a or 119b	3	Modern Higher Algebra...	Sr., grad.	51, 62
127a or 127b	3	Infinite Series.....	Sr., grad.	17 cr. besides Alg. and Trig.
140	2	Method of Least Squares..	Sr., grad.	51

54a,b. **TEACHERS' COURSE.** Text and assigned readings. Special attention paid to the fundamental principles of algebra and geometry. **REEVE.**

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 104 to 108.

## MILITARY SCIENCE AND TACTICS

### REQUIRED WORK

All physically fit male students are required to take military training during the first two undergraduate years of their course unless they have secured such training at an approved institution endorsed by the Military

Department. When this course is entered upon it must be carried to completion as a prerequisite for graduation. No credits are allowed for this work.

#### ELECTIVE WORK

(a) All juniors and seniors who have completed two years of drill may register for the course required by General Orders No. 49 War Department for members of the Reserve Officers' Training Corps. Such students sign a written agreement to continue in this corps for the remainder of the college course. The completion of this work is a prerequisite to promotion. Any student who for satisfactory reasons is permitted to withdraw from this course must reimburse the War Department for all moneys received.

Juniors and seniors who take the course required by General Orders No. 49, which includes two camps for four weeks each, will receive an allowance of thirty cents per day for subsistence while pursuing the course and will have all expenses paid to and from the encampments. They also are eligible for appointment as temporary second lieutenants in the Infantry branch of the Regular Army for six months with a salary of one hundred dollars per month upon graduation and a commission in the Reserve Corps. The Reserve Corps furnishes officers for Citizens' Training Camps in time of peace, and commission in the United States Volunteers in time of war, such officers having preference for commissions in the volunteers immediately below experienced officers in the federal service.

The course includes three hours a week of drill and three of study in the Military Department and also includes recommended courses offered by the respective colleges which have a direct bearing upon the work of the Corps, such as Military History and International Law in the Liberal Arts College. The work carries three credits in each semester in the Military Department, and such additional credits as the respective curricula of the colleges may permit.

(b) Any student having completed the two years of required Military Training may continue the work for credit in the third and fourth years. Credit for such work is allowed in practically all of the colleges of the University, the maximum being three credits a year.

#### MUSIC

Professor CARLYLE SCOTT; Assistant Professor DONALD FERGUSON; Instructors THADDEUS GIDDINGS, GERTRUDE HULL, ABE PEPINSKY, GERTRUDE REEVES.

All of the courses listed below are also open to juniors and seniors, who have fulfilled the required prerequisites.

#### COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	6	Harmony.....	Fresh. Music	None
	11	MWF	Mu	Scott
	11	TThS	Mu	Scott

No.	Credits	Title	Offered to	Prereq. courses
3-4	4	Counterpoint..... 11 TTh	Soph. Music Mu	1-2 Ferguson
5-6	4	Composition..... Ar Ar	Jr., sr. Mu	..... Ferguson
7-8	2	Analysis..... 12 W	Jr., sr. Mu	1-2 Scott
9-10	6	History of Music..... 9 MWF	Soph., jr., sr. Music Mu	None Ferguson
11-12	2	Appreciation of Music..... 1 M	Jr., sr. Mu	None Reeves
13-14	4	Bach-Beethoven..... 1, 2 T	Jr., sr. Mu	9-10 Ferguson
15-16	4 or 8	First-Year Pianoforte..... Ar Ar	Jr., sr. Mu	..... Scott, Ferguson, Reeves
19-20	4 or 8	First-Year Violin..... Ar Ar	Fresh. Music Mu	..... Pepinsky
21-22	4	First-Year Vocal Train.... Ar Ar	Fresh. Music Mu	..... Hull
27-28	6	Public School Music..... 4, 5 WF	Jr., sr. 117Ed	..... Giddings
29-30	6	Normal Piano..... 3 TF	Jr., sr. Mu	..... Reeves
31-32	4	Ensemble..... 12 F	Jr., sr. Mu	..... Scott, Ferguson, Reeves
33-34	2	Ear Training..... 2 Th	Jr., sr. Mu	None Reeves
35-36	2	Orchestra..... 7:30 ME	Soph., jr., sr. Ferguson	..... .....
37-38	6	Advanced Normal Piano... 4 TF	Sr., grad. Mu	29-30 Reeves
39-40	6	Adv. Public School Music. 4, 5 WF	..... Mu	27-28 ¶
41-42	4 or 8	Other Orchestral Instruments..... Ar Ar	Jr., sr. Mu	..... Ar
47-48	2	University Choir..... Ar Ar	Jr., sr. Ar	..... Scott
51-52	4 or 8	Second-Yr. Pianoforte.... Ar Ar	Soph. Music Mu	15-16 Scott, Ferguson, Reeves
53-54	4 or 8	Third-Yr. Pianoforte.... Ar Ar	Jr. Mu	47-48 Scott, Ferguson, Reeves
55-56	4 or 8	Fourth-Yr. Pianoforte.... Ar Ar	Sr. Mu	53-54 Scott, Ferguson, Reeves
59-60	4 or 8	Second-Yr. Violin..... Ar Ar	Soph. Music Mu	19-20 Pepinsky
61-62	4 or 8	Third-Yr. Violin..... Ar Ar	Jr. Mu	59-60 Pepinsky
63-64	4 or 8	Fourth-Year Violin..... Ar Ar	Sr. Mu	61-62 Pepinsky
67-68	4	Second-Year Vocal Train. Ar Ar	Soph. Music Mu	21-22 Hull
69-70	4	Third-Year Vocal Training. Ar Ar	Jr. Mu	67-68 Hull
71-72	4	Fourth-Year Vocal Training..... Ar Ar	Sr. Mu 4	69-70 Hull

All of the above courses carry credit in the College of Education. For description see bulletin of the College of Science, Literature, and the Arts, page 109.

## PHILOSOPHY

Professors NORMAN WILDE, DAVID F. SWENSON; Assistant Professor RUPERT C. LODGE.

## REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, besides the general requirements, twenty-four credits in starred courses, including one of the following: 124, 125, 136, 138, 141-142.

Except where otherwise noted, six credits in Psychology may be counted toward the prerequisites.

## COURSES

*First Semester*

No.	Credits	Title	Offered to	Prereq. courses
1	3*	Problems of Philosophy . . .	Soph., jr., sr.	None
	9	MWF	322F	Swenson
	11	TThS	322F	Lodge
3a	3*	Ethics . . . . .	Soph., jr., sr.	None
	10	TThS	322F	Wilde
9	3	Philosophy and the War . . .	Soph., jr., sr.	None
	10	MWF	322F	Wilde, Swenson, Lodge
55	3	Esthetics . . . . .	Jr., sr.	6 credits
	8	TThS	322F	Swenson
63	3	Development of Religion . . .	Jr., sr.	6 credits
	9	MWF	322F	Swenson
121-122	6	General History of Philos. . .	Jr., sr., grad.	6 credits
	11	MWF	322F	Wilde
125	3	Plato . . . . .	Jr., sr., grad.	9 cr. incl. 6 in Phil.
	Ar	Ar	316F	Lodge
141-142	6	Seminar in Philosophy . . . .	Jr., sr., grad.	12 cr. in Philosophy

*Second Semester*

2	3*	Logic . . . . .	Soph., jr., sr.	None
	9	TThS	322F	Swenson
	11	MWF	322F	Lodge
3b	3*	Ethics . . . . .	Soph., jr., sr.	None
	9	MWF	304F	Wilde
10	1	Science and Religion . . . .	Soph., jr., sr.	6 cr. in Phil. or Psychol. or Biol.
	11	T	322F	Swenson
20	3	Present-Day Philosophy . . .	Jr., sr.	6 credits
	10	TThS	333F	Wilde
64	3	Philosophy of Religion . . . .	Jr., sr.	6 credits
	9	MWF	322F	Swenson
100	3	Critical Idealism . . . . .	Jr., sr., grad.	6 credits in Phil.
	2	MWF	322F	Lodge
121-122	3	History of Philosophy . . . .	Jr., sr., grad.	6 credits
	11	MWF	322F	Wilde
124	3	Nineteenth Century Philosophy . . . . .	Jr., sr., grad.	9 cr. incl. 6 in Phil.
	Ar	Ar	316F	Lodge
136	3	Scandinavian Philosophy . . .	Jr., sr., grad.	9 credits
	4-5:30	WF	322F	Swenson

\* 1 and 2 or 3 may be combined as a year course.

No. Credits	Title	Offered to	Prereq. courses
138 3	Advanced Logic.....	Jr., sr., grad.	9 credits incl. 2
141-142 3	10 MWF Seminar in Philosophy ....	322F Swenson	12 credits
	Ar Ar	316F Wilde	

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 112 to 114.

## PHYSICAL EDUCATION FOR MEN

Director LOUIS J. COOKE; Assistant Director WILLIAM K. FOSTER; Instructor JOHN C. WEST.

### GENERAL STATEMENT

The purpose of the department is to provide all men of the University opportunity for exercise in order to maintain and build up their general health. It also provides special training for the correction of physical defects and functional derangements.

A physical examination is required of all new matriculants, and of all others using the department privileges, at the beginning of the year, and as often during their college course as their physical condition may indicate. Students taking the required work in physical education are examined also at the close of the year. A study of these records shows a marked improvement in the standard of health of the average student during his college course.

The gymnasium, swimming pool, and baths are open to all students of the University, who are free to use the apparatus and to pursue a course in physical training under the supervision of the director and his assistants.

Those students, taking the required course in physical education who can not swim, must make a reasonable effort as determined by the department, to pass the swimming and life-saving requirements, and will be assigned special hours for instruction.

### COURSES

No. Credits	Title	Offered to	Prereq. courses
1	None Personal Hygiene.....	Fr.	None
2	MF	201A	Cooke
3	MF	201A	Cooke
11	TS	201A	Cooke
11	WF	201A	Cooke
3-4	None Gymnasium.....	Fr.	None
2	MF	100A	Foster-West
3	MF	100A	Foster-West
11	TS	100A	Foster-West
11	WF	100A	Foster-West
5-6	None Intermediate Gymnastics..	Fr.	None
2	MF	100A	Foster-West
3	MF	100A	Foster-West
11	TS	100A	Foster-West
11	WF	100A	Foster-West

No.	Credits	Title	Offered to	Prereq. courses
7-8	2 <sup>#</sup>	Advanced Leaders.....	Soph., jr., sr.	1, 3-4, 5-6
	2	MF	100A	Foster-West
	3	MF	100A	Foster-West
	11	TS	100A	Foster-West
	11	WF	100A	Foster-West
9-10	None	Corrective Gymnastics....	All	None
	Ar	Ar	100A	Foster-West
11-12	None	Wrestling.....	Soph., jr., sr.	None
	5	MWF	106A	Foster
13-14	None	Advanced Gymnastics.....	Soph., jr., sr.	None
	Ar	Ar		West-Foster
15-16	None	Intermediate Swimming...	All	None
	Ar	Ar		Foster
17-18	None	Advanced Swimming.....	All	15-16

<sup>#</sup> Both semesters must be completed before credit is given for the first semester.

For description of the above courses see College of Science, Literature and the Arts bulletin, pages 117 to 118.

## PHYSICAL EDUCATION FOR WOMEN

Associate Professor J. ANNA NORRIS; Assistant Professor MAY S. KISSOCK; Instructors VALERIA G. LADD, GERTRUDE B. SCHILL, ALICE H. TOLG.

### INTRODUCTORY STATEMENT

This department aims primarily to promote the health of the women students. It gives physical examination and advice to all on entrance; plans systematically to keep in close touch with them during their first year in college; conducts yearly consultations with, and examines when necessary, all upper-class students; gives courses in hygiene; organizes physical work to meet the varying needs and physical tastes of students; coöperates closely with the Woman's Athletic Association in encouraging and organizing athletic sports; holds regular office hours for the purpose of consultation with all students who desire its advice; and investigates cases of illness which come to its attention.

Work in this department is required of all newly entering students (see Courses 1-2 and 11), of sophomores who can not pass the swimming examination (see Course 43-44), and of all students permitted, for reasons connected with their physical condition, to carry less than the minimum number of credit hours. Physical examinations or consultations required annually of all students.

Elective classes arranged in gymnastics, dancing, swimming, field hockey, basket-ball, baseball, and other organized games.

For a teacher's certificate, minor recommendation, the following courses must be taken: 1-2, 3-4, 5-6, 13, 15-16, 31-32, 33-34, 43a or b. Course 5-6 must be taken in senior year.

Six credits is the maximum number that can be gained by taking courses in exercise (Courses 3-4, 5-6); only one of these courses may be taken for credit in a semester.

			COURSES	
No.	Credits	Title	Offered to	Prereq. courses
	1-2	None Elem. Phys. Training.....	Required of all new students...None	
	11	MWF	3, 151, 153 WGm	
	2	MWF	3, 151, 153 WGm	
	3	MWF (double section)....	3, 151, 153 WGm	
3-4	3	Intermediate Phys. Train...	Soph., jr., sr.	Equivalent of 1-2 153WGm Kissock
	3	TTh		
		One other hour arranged		
5-6	3	Advanced Physical Train..	Jr., sr.	3-4, permission of director
	11	TS	153WGm	Ladd
	11	None Preliminary Hygiene.....	Required of all new students	None
	11	M	201WGm	
	1	M	201WGm	
	2	T	201WGm	
	4	W	201WGm	
13	3	Personal Hygiene.....	Soph., jr., sr.	An. Biol. 1-2
	9	MWF	201WGm	Norris
14	3	Hygiene of the Family....	Jr., sr.	An. Biol. 1-2
	9	TThS	201WGm	Norris
15-16	6	Prin. of Phys. Ed.....	Sr.	1-2, 3-4, 31-32, 33-34
	9	TThS	201WGm	Kissock, Schill, Tolg
	1	MWF	3, 151, 153 WGm	
21-22	None	Rhythmic Expression .....	All	None
	4	MW	153WGm	Ladd
	4	TTh	153WGm	Ladd
31-32	None	Folk Dancing and Organ. Games.....	All	None
	2	TTh	151WGm	Schill
33-34	None	Hockey, Basket and Base- ball.....	All	Permission of Director
	4	MW	151WGm	Kissock
	4	TTh	151WGm	Kissock
43-44	None	Elementary Swimming....	Required of soph. who need instruc- tion in swimming.	
	10	TS	Open to freshmen.	
	11	TS	51WGm	Ladd
	2	TTh	51WGm	Kissock
	3	TTh	51WGm	Ladd
	4	MF	51WGm	Schill

Diving and advanced strokes in swimming taught at 12 T and at 4 W. General Swimming without instruction 12 WF and 5 WTh.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 114 to 116.

## PHYSICS

Professors HENRY A. ERIKSON, W. F. G. SWANN, ANTHONY ZELENY; Associate Professors LOUIS W. MCKEEHAN,\* JOHN T. TATE;\* Assistant Professor PAUL E. KLOPSTEG; Professorial Lecturer LOUALLEN F. MILLER.

## REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, the general requirements; work chosen from any courses above 40, except 90; and any course in mathematics open only to juniors and seniors if approved by the department. Mathematics 106, 107, 108, 140 have already been thus approved. Thesis in connection with any course in Physics above 150.

For a teacher's certificate, fourteen credits, including Course 90. Courses 21, 22, 31, 41, 43, 162, 52, 54, with prerequisites in mathematics comprise a three-year course in Physics beginning with the freshman year. It is designed to meet the needs of those who intend to take up the teaching of Physics or who are planning to enter the field of industrial research. It is recommended to those students desiring honors in Physics. Students who have completed Courses 1, 2, 3, 4, or Courses 7, 8, 9, 10, may continue with the second year of this course after conference with the department.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	3	General Physics.....	Soph., jr., sr.	Math. 2 or 4 or reg. in Math. 2 or 4.
	4	M	30Ph	Zeleny
	8	TThS	17Ph	Klopsteg
	9	TThS	17Ph	Zeleny
	10	TThS	17Ph	Zeleny
	11	MWF	17Ph	Zeleny
2	3	General Physics.....	Soph., jr., sr.	1 or 7
	4	M	30Ph	Zeleny
	8	TThS	17Ph	Klopsteg
	9	TThS	17Ph	Zeleny
	10	TThS	17Ph	Zeleny
	11	MWF	17Ph	Zeleny
3	1	General Lab. Practice.....	Soph., jr., sr.	Registration in 1
		Ar	23Ph	Ar
4	1	General Lab. Practice.....	Soph., jr., sr.	See statement
		Ar	23Ph	Ar
21	3	Elements of Mechanics....	Fr., soph.	High school Physics, Math. 2 or 4 or reg. in Math. 2 or 4
	Lect. 10	MF	16Ph	Tate, Miller
	Lab. 10	Th	16Ph	Tate, Miller
22	3	Elements of Mechanics....	Fr., soph.	21, Math. 9 or reg. in Math. 9b
	Lect. 10	MF	16Ph	Tate, Miller
	Lab. 10	Th	16Ph	Tate, Miller
31	3	Acoustics.....	Soph., jr., sr.	Statement
	9	TThS	30Ph	Erikson

\* On leave for duration of war.

No.	Credits	Title	Offered to	Prereq. courses
41	3	Heat..... 10 MWF	Soph., jr., sr.	2, 8, or 22, Math. 2 or 4
43	1	Experiments in Heat..... 10-12 S	2Ph Klopsteg Soph., jr., sr.	Klopsteg Registration in 41
52	3	Light..... Ar Ar	2Ph Klopsteg Soph., jr., sr.	Klopsteg 2, 8, or 22, Math. 2 or 4
54	1	Experiments in Light..... Ar Ar	Ar Erikson Soph., jr., sr.	Erikson Regis. in 52
81	2	Physical Manipulation and Laboratory Technique... Not given 1918-19	Ar Ph Erikson	Erikson
82	2	Physical Instruments of Precision..... Not given 1918-19	Soph., jr., sr.	2 and 4, 8 and 10, or 22
90	2	Teachers' Course..... Ar Ar	Soph., jr., sr.	81
121-122	6	Dynamics..... Ar Ar	Soph., jr., sr.	2 and 4, 8 and 10, or 2 yrs. of Physics
			Ar Klopsteg	
			Jr., sr., grad.	2 or 8 or (22) and Math. 51
155	3	Spectrometry..... Ar Ar	17Ph Tate Jr., sr., grad.	52 and 82
162	4	Electricity and Magnetism. Ar Ar	4Ph Erikson Jr., sr., grad.	2 and 4, 8 and 10, or 22, Math. 51
163	2	Electrical Measurements.. 2-3 WF	ArPh Zeleny Jr., sr., grad.	Zeleny 162, 2 and 4, or 8 and 10
166	3	Elec. Meas. of Precision.... 3, 4, 5 MF	31Ph Zeleny Jr., sr., grad.	163
174	3	Radioactivity and Roent- gen Rays..... Ar Ar	31Ph Zeleny Sr., grad.	Zeleny 2 and 4
177	3	Radioactivity..... 4 MWF	Ar McKeehan Sr., grad.	McKeehan 8 cr. in Physics and Math. 11
178	3	Radioac. Measurements... Ar Ar	15Ph McKeehan Sr., grad.	McKeehan 177
181	3	Adv. Phys. Measurements. 2, 3, 4 MW	15Ph McKeehan Sr., grad.	McKeehan 82 or 155 or 166 or 178
182	3	Adv. Phys. Measurements. 2, 3, 4 MW	Ar Ar Sr., grad.	Ar 181
191a	3	Elem. Phys. Investigation. 2, 3, 4 MW	Ar Ar Sr., grad.	Ar 82 or 155 or 166 or 178
192a	3	Elem. Phys. Investigation. 2, 3 MWF	Ar Ar Sr., grad.	Ar 82 or 155 or 166 or 178
191b	3	Elem. Phys. Invstigation. 2, 3 MWF	Ar Ar Sr., grad.	Ar 191
192b	3	Elem. Phys. Investigation. 2, 3, 4 MW	Ar Ar Sr., grad.	Ar 191

90. TEACHERS' COURSE. Methods of presentation; selection of lecture and laboratory experiments; laboratory management. KLOPSTEG.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 118 to 122.

## POLITICAL SCIENCE

Professors CEPHAS D. ALLIN, JEREMIAH S. YOUNG; Assistant Professor WILLIAM ANDERSON; Lecturer ALBERT J. LOBB; Instructor PERCIVAL W. VIESSELMAN.

## REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits.

*For a major*, twenty-four credits.

*For B.A. with Honors*, see general requirements.

*For a teacher's certificate*, in government, Courses 1, 3, and 5 in Political Science and eighteen credits in History.

The Departments of Economics, Political Science, History, and Sociology and Anthropology constitute a social science group. The subjects are intimately interrelated, and they are all of special importance to students who intend to engage in law, business, public service at home or abroad, journalism, the work of charities and corrections, or to give instruction in one of the social sciences. Students who are interested in the work of any one of the departments of the social science group ought to be familiar with at least the elements of the subjects offered in the other departments. A student who takes his major in any one of them ought to have more than the elements of the others.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
<i>Introductory Course</i>				
1a	3	American Government....	Soph., jr., sr.	None
	8	MWF	102MA	Viesselman
	9	TThS	102MA	Allin
	10	MWF	202MA	Young
	11	MWF	102MA	Lobb
	2	MWF	102MA	Anderson
1b	3	American Government....	Soph., jr., sr.	None
	9	TThS	102MA	Lobb
	10	MWF	102MA	Lobb
	2	MWF	109MA	Anderson
<i>General Courses</i>				
3a	3	State and Local Government.....	Soph., jr., sr.	1
	10	TThS	109MA	Lobb
	2	MWF	109MA	Lobb
3b	3	State and Local Government.....	Soph., jr., sr.	1
	10	MWF	202MA	Young
	10	TThS		Anderson
	11	MWF	109MA	Lobb
5	3	Municipal Government....	Soph., jr., sr.	1
	11	MWF	109MA	Anderson
8	2	Principles of Pol. Sci.....	Soph., jr., sr.	1
	9	TTh	213MA	Anderson
51	3	Business Law, I.....	Jr., sr.	6 cred. in Pol. Sci., or 6 in Econ., or 3 in each.
	9	MWF	202MA	Young

No.	Credits	Title	Offered to	Prereq. courses
52	3	Business Law, II.....	Jr., sr. 202MA	51 Young
		9 MWF		
58	2	Elementary Law.....	Jr., sr.	6 cred., or 3 cred. in Pol. Sci., and 3 in Sociology.
		11 TS	109MA	Lobb
<i>Special Courses</i>				
56-57		Teachers' Course.....	Jr., sr.	See statement
		Ar Ar	Ar	Lobb
<i>Advanced Courses</i>				
101	3	Constitutional Law.....	Jr., sr., grad. 213MA	6 credits Lobb
		9 TThS		
106	2	Legislative Power and Methods.....	Jr., sr., grad. 102MA	6 credits Young
		11 TS		
107	2	Contemporary Political Problems.....	Jr., sr., grad. 102MA	6 credits Young
		11 TS		
108	3	Police Power.....	Jr., sr., grad. 102MA	6 credits Young
		10 TThS		
109	3	Diplomacy.....	Jr., sr., grad. 213MA	6 credits Allin
		2 MWF		
110	3	International Law.....	Jr., sr., grad. 102MA	1 and 109, or 111 or 116 Allin
		2 MWF		
111	3	Comparative European Government.....	Jr., sr., grad. 213MA	6 credits Anderson
		10 MWF		
112	3	Comparative Federal Government.....	Jr., sr., grad. 109MA	6 credits Allin
		10 TThS		
115	3	Gov't of the British Empire.....	Jr., sr., grad. 213MA	6 credits, or Pol. Sci. and Hist. 7 Allin
		10 TThS		
117	2	American Diplomatic Problems.....	Jr., sr., grad. 109MA	6 credits Anderson
		10 TTh		
118	2	World Politics.....	Jr., sr., grad. 213MA	6 credits Allin
		10 MW		
120	3	Municipal Problems.....	Jr., sr., grad. 102MA	5 or its equivalent Anderson
		11 MWF		
201-202	6	Research.....	Sr., grad. Ar	12 credits Allin
		Ar Ar		
203-204	6	Research.....	Sr., grad. Ar	12 credits Young
		Ar Ar		
205-206		Research.....	Sr., grad. Ar	12 credits Anderson
		Ar Ar		

56-57. TEACHERS' COURSE. Lectures on teaching government in the secondary schools, given in coöperation with the Department of History and credited as part of History 56-57. LOBB.

All of the above courses receive credit in the College of Education. For description see bulletin of College of Science, Literature, and the Arts, pages 122 to 126.

## PSYCHOLOGY

Professors ROBERT M. YERKES,\* MELVIN E. HAGGERTY;\* Associate Professor HERBERT WOODROW;\* Assistant Professors HENRY T. MOORE,\* JOSEPH PETERSON; Instructors JOHN D. DODSON, KARL S. LASHLEY,\* FRANCES LOWELL; Assistant ALICE H. SULLIVAN.

## COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	6	General Psychology.....	Soph., jr., sr.	None
	Rec. 8	MWF	321F	Peterson
	9	MWF	321F	Peterson
	9	TThS	321F	.....
	9	TThS	304F	Lowell
	10	MWF	321F	Dodson
	10	MWF	304F	.....
	10	TThS	321F	Lowell
	11	MWF	321F	Dodson
	1	TThS	321F	.....
	2	MWF	321F	Lowell
	2	MWF	322F	Lodge
	3	MWF	321F	Dodson
1a	3	General Psychology.....	Soph., jr., sr.	None
	Ar	TThS	Ar	Dodson
1b	3	General Psychology.....	Soph., jr., sr.	None
	Ar	TThS	Ar	Dodson
	Music	TThS9	311F	.....
101	3	Experimental Psychology..	Jr., sr., grad.	1-2
	4	T	316F	Peterson
	2, 3	TTh	318F	.....
106	3	Mental Retardation.....	Jr., sr., grad.	1-2
	3	MWF	322F	Lowell
107	3	Social Psychology.....	Jr., sr., grad.	1-2
	3	MWF	322F	Peterson
110	3	Abnormal Psychology.....	Jr., sr., grad.	1-2
	8	TThS	321F	Peterson

All of the above courses carry credit in the College of Education. For description see Bulletin of the College of Science, Literature, and the Arts, page 126.

## ROMANCE LANGUAGES

Professors EVERETT W. OLNSTED, IRVILLE C. LECOMPTE, COLBERT SEARLES; Assistant Professors FRANCIS B. BARTON, JULES FRELIN, RUTH S. PHELPS; Professorial Lecturer PEDRO HENRIQUEZ URENA; Instructors HERBERT CLEFTON, SOLOMON M. DELSON, MARGUERITE GUINOTTE, GUSTAV VAN ROOSBROECK; Assistants JOSEPHINE DE BOER, CLEMENT J. DE BERE.

## REQUIREMENTS OF THE DEPARTMENT

*For B.A. with Honors*, general requirements; a reading knowledge of Latin or German with two years work in Spanish or Italian. In the junior year, Courses 61-62, 63-64, 75-76, 101-102; in the senior year,

\*Absent on leave.

Courses 103-104, 107-108, 109-110, 115-116 (or 117-118). Substitutions for these courses may be granted by the department in special cases. Alteration of courses required in the junior and senior years is allowable.

*For major recommendation for teacher's certificate, in addition to Courses 1a and 3a, or Spanish equivalent, twenty-six credits.*

*For minor recommendation for teacher's certificate, in addition to Courses 1a and 3a, or Spanish equivalent, twelve credits in one Romance Language.*

*Prerequisite for teachers' course, in addition to Course 5-6 or Spanish equivalent one conversation-composition course and one literary course.*

The Department of Romance Languages offers to experienced teachers in other languages who desire to prepare themselves for teaching French or Spanish in the high schools, a practical, intensive training course covering a residence of one summer session and one academic year, or one academic year for those offering entrance credits in French or Spanish, or passing an examination for the equivalent of the same.

Upon the completion of the course the department will award to successful candidates a Certificate of Aptitude in French or Spanish.

One or more of the department's teaching fellowships may be available to candidates of exceptional merit. It is planned to provide practice teaching in the schools of the Twin Cities and environs for as many as possible of the candidates.

#### SCHEDULE OF COURSES

**NOTE:** The curriculum for French is here given. Those electing Spanish will take equivalent courses in that language. For description of courses see Bulletin of Science, Literature, and the Arts.

**A. The Summer Session**

French 1s—French for Beginners.....	3 credits
French 3s—Intermediate.....	1½ credits

**NOTE:** The above courses are not credited toward the Certificate.

**B. The Academic Year**

French 5-6—Survey of French Literature.....	6 credits
French 7-8—Elementary Conversation.....	2 credits
French 9-10—Elementary Composition.....	2 credits
French 161-162—Teachers' Course .....	4 or 6 (½) credits
French 75-76—Nineteenth Century Literature.....	6 credits

**NOTE:** If the teacher has sufficient time at his or her disposal, it would also be well to elect either the Eighteenth or the Seventeenth Century French or to pursue work in Spanish or Italian.

#### COURSES

No.	Credits	Title	Offered to	Prereq. courses
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1a	6	Beginning French.....	All	None
	8	MTWThFS	201F	van Roosbroeck, de Bère
	9	MTWThFS	201F	Clefton, de Boer, Frelin
	10	MTWThFS	227F	Searles, Le Compte
	1	MTWThFS	226F	
1b	6	Beginning French.....	All	None
	8	MTWThFS	205F	
	9	MTWThFS	227F	

No.	Credits	Title	Offered to	Prereq. courses
2a	3	Beginning French (2nd half of 1a) (Not given in 1918-19)	All	
	9	MWF		
3a	6	Intermed. French.....	All	1a or equiv. Guinotte
	9	MTWThFS	205F	Delson, Clefton
	10	MTWThFS	25F	
3b	6	Intermed. French.....	All	1a or equiv. van Roosbroeck, de Bère
	8	MTWThFS	201F	Frelin, Clefton, de Boer
	9	MTWThFS	201F	
	10	MTWThFS	227F	Searles
	1	MTWThFS	226F	
4	6	Survey French Lit.....	All	3a or equiv. Guinotte
	9	MTWThFS	227F	Delson
	10	MTWThFS	227F	
5-6	6	Survey French Lit.(year course)	All	3a or equiv. LeCompte
	9	TThS	202F	Phelps
	10	TThS	202F	van Roosbroeck
	11	MWF	5F	Barton
	2	MWF	15F	
7-8	2	Element. French Convers..	All	3a or equiv. van Roosbroeck
	9	TTh	227F	Guinotte
	3	MW	227F	de Bère
	9	MW	Ar	
9-10	2	Element. French Compos..	All	3a or equiv. van Roosbroeck
	9	S	227F	Guinotte
	3	F	227F	de Bère
	9	F	Ar	
31a	6	Beginning Spanish.....	All	None
	8	MTWThFS	301F	
	9	MTWThFS	301F	Henriquez, Delson
	10	MTWThFS	25F	
31b	6	Beginning Spanish.....	All	None
	10	MTWThFS	25F	
33-44	6	Beginning Spanish (year course).....	All	None
	8	TThS	202F	Clefton
	9	MWF		
	10	MWF	201F	Frelin
	11	MWF		Olmsted, Phelps
35a	6	Intermed. Spanish.....	All	31a or equiv.
	See statement (not offered in 1918-19)			
35b	6	Intermed. Spanish.....	All	31a or equiv.
	9	MTWThFS	15F	Delson
	10	MTWThFS	125F	
37-38	6	Intermed. Spanish (year course).....	All	31a or equiv.
	9	MWF	201F	Barton
	10	TThS	201F	Barton
39-40	6	Survey of Span. Lit.....	All	35a or equiv.
	9	MWF	227F	
41-42	2	Elem. Spanish Convers....	All	35a or equiv.
	11	MW	226F	Henriquez
43-44	2	Elem. Spanish Compos....	All	35a or equiv.
	11	F	226F	Henriquez
51-52	6	Beginning Italian.....	All	None
	9	MWF	202F	Phelps
53-54	6	Represent. Italian Authors.	Soph., jr., sr.	51-52 or equiv.
	11	TThS	201F	Phelps

No.	Credits	Title	Offered to	Prereq. courses
61-62	2	Advanced French Convers.. 3 MW	Jr., sr. 202F	7-8 or equiv. Frelin
63-64	2	Advanced Fr. Compos..... 3 F	Jr., sr. 202F	9-10 or equiv. Frelin
75-76	6	French Lit.; 19th Century. 11 MWF 2 MWF	Soph.,* jr., sr. 15F	5-6 or equiv. Barton Delson
101-102	6	French Lit.: 18th Century.. 11 MWF	Jr., sr., grad. 202F	5-6 or equiv. Searles
103-104	6	French Lit.: 17th Century. 10 MWF	Jr., sr., grad. 201F	5-6 or equiv. Olmsted
105-106	6	French Lit.: 16th Century. 11 MWF	Jr., sr., grad. Seminar	101-102; 103-104 or equiv. van Roosbroeck
107-108	4	French Oral Diction..... 11 TS	Jr., sr., grad. 202F	61-62 or equiv. Frelin
109-110	2	French Syntax..... 9 Th	Jr., sr., grad. 202F	63-64 or equiv. Barton
111-112	4	Lectures in French..... 2 MW	Jr., sr., grad. 201F	5-6; 61-62 or equiv. Not offered 1918-19
113-114	4	Fr. Literature; Classicism.. 11 TTh (not offered in 1918-19)	Sr., grad. Seminar	103-104 or equiv. 103-104 or equiv.
115-116	4	French Lyric Poetry..... 11 TS	Sr., grad. Searles	103-104 or equiv. 103-104 or equiv.
117-118	4	French Dramatic Lit..... 10 TTh	Sr., grad. Seminar	103-104 or equiv. Olmsted
131-132	2	Advanced Span. Convers.. 11 TS	Jr., sr., grad. 227F	41-42 or equiv. Henríquez
133-134	2	Advanced Spanish Compos. 1 Th	Jr., sr., grad. 227F	43-44 or equiv. Henríquez
135-136	2	Spanish Novel..... (not given in 1917-19)		
137-138		Spanish Literature 19th Century (not given in 1917-19)		
145-146	4	Spanish Drama 11 TS	Ar	.....
147-148	4	Spanish Lectures..... 4 MW	Jr., sr., grad. 210F	41-42; 43-44; or equiv. Henríquez
149-150	4	Cervantez..... 10 TS	Jr., sr., grad. Ar	..... Henríquez
151-152	4	Dante, Petrarch, Boccaccio, 2 MW	Jr., sr., grad. 202F	51-52 or equiv. and either 53-54; 5-6 or English 1 Phelps
153-154	2	Dante, (In English).....	Jr., sr., grad.	Hist. 1-2 and either Eng. 1 or Fr. 5-6. Prereq. for persons taking in ad- dition Course 151-152 same as listed for 151- 152
161-162	6	2 F Teachers' Course..... 2-3:30 TTh	202F Jr., sr., grad. 201F	Phelps See above de Boer

\* Who have had the five years preparation required.

NOTE: Course 7-8 may be taken only with 9-10; 9-10 may be taken separately. Course 41-42 may be taken only with 43-44; 43-44 may be taken separately. Course 61-62 may be taken only with 63-64; 63-64 may be taken separately. Course 151-152 may be taken only with 153-154; 153-154 may be taken separately. Courses 1, 3, 31, 35, 4, are double courses. Students are advised to take Course 75-76 as a natural preparation for

Courses 101-102 and 103-104. Permission to register for Courses from 75-76 to 161-162 inclusive may be granted by the department in special cases. Both semesters of any year course must be completed before credit is allowed for the first semester. The preceding statement applies also to Courses 1a and 3b for freshmen and Courses 31a and 35b for freshmen.

161-162. TEACHERS' COURSE. Lectures and discussions on methods, text books, etc. DE BOER.

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 128 to 133.

### SCANDINAVIAN

Professors GISLE BOTHNE, ANDREW A. STOMBERG.

#### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits, not including Courses 1 and 5.

*For a major*, twenty-four credits.

*For B.A. with Honors*, the general requirements, and six credits of Scandinavian in addition to what is required for a major.

#### COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	6*	Beginning Norwegian.....	All	None
	8	MTWThFS	206F	
2	6*	Intermediate Norwegian...	All	1
	8	MTWThFS	206F	
3-4	6†	Advanced Norwegian.....	Soph., jr., sr.	2
	9	TThS	110F	Bothne
5	6*	Beginning Swedish.....	All	None
	9	MTWThFS	206F	Stomberg
6	6*	Intermediate Swedish.....	All	5
	9	MTWThFS	206F	Stomberg
7-8	6	Advanced Swedish.....	Soph., jr., sr.	6
	8	MWF	205F	Stomberg
13-14	6	History of North. Europe..	Soph., jr., sr.	Consult Dept.
	11	MWF	206F	Stomberg
101-102	6	Modern Norwegian Lit....	Jr., sr., grad.	3-4
	10	TThS	206F	Bothne
103	3	Earlier Norwegian Lit....	Sr., grad.	101-102
	11	TThS	206F	Bothne
104	2	Henrik Ibsen.....	Sr., grad.	101-102
	11	TTh	206F	Bothne
107-108	6	Swedish Literature.....	Jr., sr., grad.	7-8
	2	MWF	206F	Stomberg
109	2	Strindberg.....	Sr., grad.	107-108
	Ar	Ar	206F	Stomberg
110	2	Teachers' Course in Norwegian.....	Sr., grad.	3-4
	4 & 5	Th	206F	Bothne
113-114	4	Old Norse (Icelandic). ....	Sr., grad.	See statement
	Ar	Ar	206F	Bothne
116	2	Teachers' Course in Swedish	Sr., grad.	7-8
	Ar	Ar	206F	Stomberg

\* Freshmen must complete intermediate course before credit is given for beginning course.

† Both semesters must be completed before credit is given for the first semester.

110. **TEACHERS' COURSE IN NORWEGIAN.** For students who expect to teach Norwegian in the high schools. **BOTHNE.**

116. **TEACHERS' COURSE IN SWEDISH.** For students who expect to teach Swedish in the high schools. **STOMBERG.**

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 133 to 135.

## SOCIOLOGY AND ANTHROPOLOGY

Professors **ALBERT ERNEST JENKS**, **ARTHUR J. TODD**; Associate Professor **LOUIS L. BERNARD**; Assistant Professor **HENRY T. MOORE**; Lecturers **FRANK J. BRUNO**, **OTTO W. DAVIS**, **ARTHUR H. TAYLOR**; Superintendents of State Board of Control institutions.

### REQUIREMENTS OF THE DEPARTMENT

*For a minor*, twelve credits.

*For a major*, twenty-four credits.

*For B.A. with Honors*, see general requirements.

*For recommendation for teaching*, credits in the following courses: 1, 4, 6, and two advanced courses.

Modern university education is not complete unless the graduate has obtained the social point of view. To this end the department offers elementary courses dealing with peoples, with social forces, institutions, and movements. Its more advanced courses are designed especially for students majoring in the Social Sciences; namely, Sociology and Anthropology, Economics, History, and Political Science.

### COURSES

No. Credits	Title	Offered to	Prereq. courses
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#### *Introductory Courses*

1a 3	General Introduction.....	Soph., jr., sr.	None
8	MWF	101EN	Bernard
10	MWF	9F	Jenks
10	TThS	9F	Todd
2	MWF	301F	Bernard
1b 3	2 MWF	301F	Bernard
4 3	Cultural Anthropology....	Soph., jr., sr.	1
10	MWF	9F	Jenks
6 3	Social Reform Movements.	Soph., jr., sr.	1
10	TThS	9F	Todd

#### *General Courses*

51 3	Treatment of Dependents and Defectives.....	Jr., sr.	1 or 6
	8 TThS	9F	Bruno
52 3	Child Welfare.....	Jr., sr.	51
	8 TThS	9F	Taylor
53 3	Treatment of Delinquents..	Jr., sr., grad.	1 or 6 and Psychol. 1-2
	9 MWF	9F	Todd
55 2	Housing Problems.....	Jr., sr.	1 and 6
	8 MW	9F	Davis

No.	Credits	Title	Offered to	Prereq. courses
14	3	Rural Community.....	Jr., sr.	1
	8	MWF	203He	Bernard
<i>Advanced Courses</i>				
102a	3	Social Theory.....	Jr., sr., grad.	1, 9 or 10 and 1 other course
	9	TThS	9F	Bernard
104	2	State Care of Dep., Def., and Delinquents.....	Jr., sr., grad.	51, and 52 or 53
	3, 4	F	9F	Todd and Supts.
107	3	Social Psychology.....	Jr., sr., grad.	See statement
	3	MWF	322F	Moore
110a	3	Physical Anthropology....	Jr., sr., grad.	See bulletin statement
	2	MWF	9F	Jenks
112	3	American Negro.....	Jr., sr., grad.	1 and two others
	2	MWF	9F	Jenks
113	3	American People.....	Jr., sr., grad.	1 and two others
	11	MWF	9F	Jenks
114	3	American People (cont'd)...	Jr., sr., grad.	1, 113, and one other
	11	MWF	9F	Jenks
119	3	The Family.....	Jr., sr., grad.	9 credits
	9	TThS	9F	Todd
120	3	Social Progress.....	Sr., grad.	See bulletin statement
	9	TThS	9F	Todd
123-124	3	Seminar in Anthropology.. (each)	Sr., grad.	For sr. four correlated courses
	2, 3	Th	205 Lib.	Jenks
201-202	2 or	Research in Sociology.....	Grad.	Graduate standing
	Ar	Ar	Ar	Todd
204	Ar	Sem. in Anthropology.....	Grad.	Graduate standing
	Ar	Ar	Ar	Jenks

All of the above courses receive credit in the College of Education. For description see College of Science, Literature, and the Arts bulletin, pages 138 to 141.

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